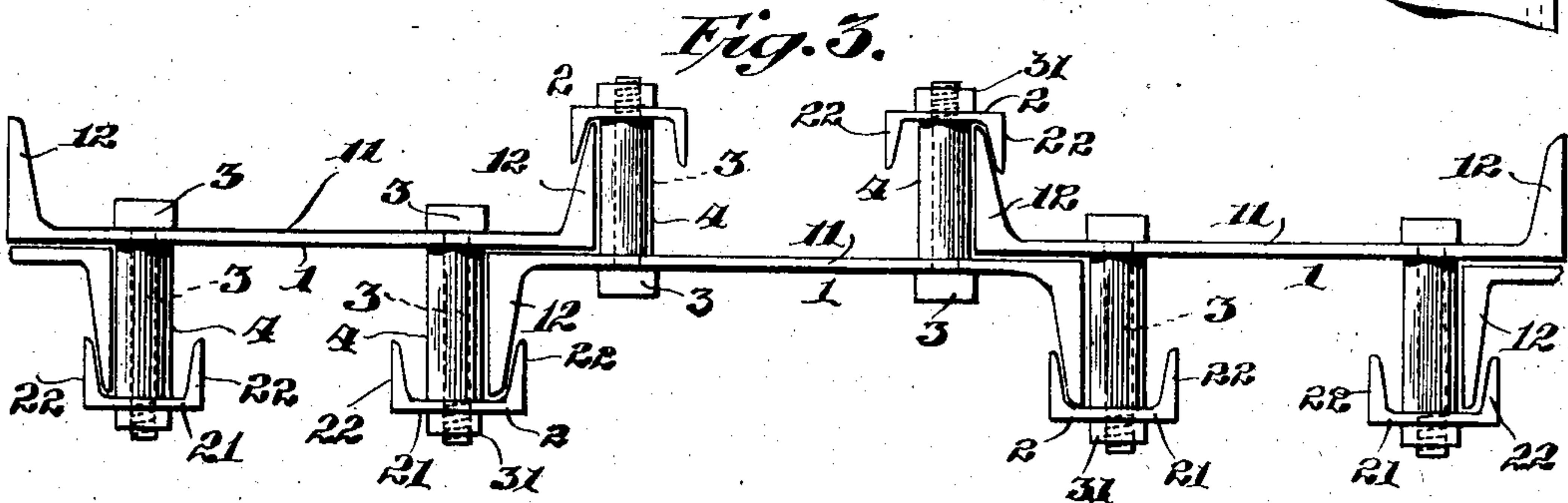
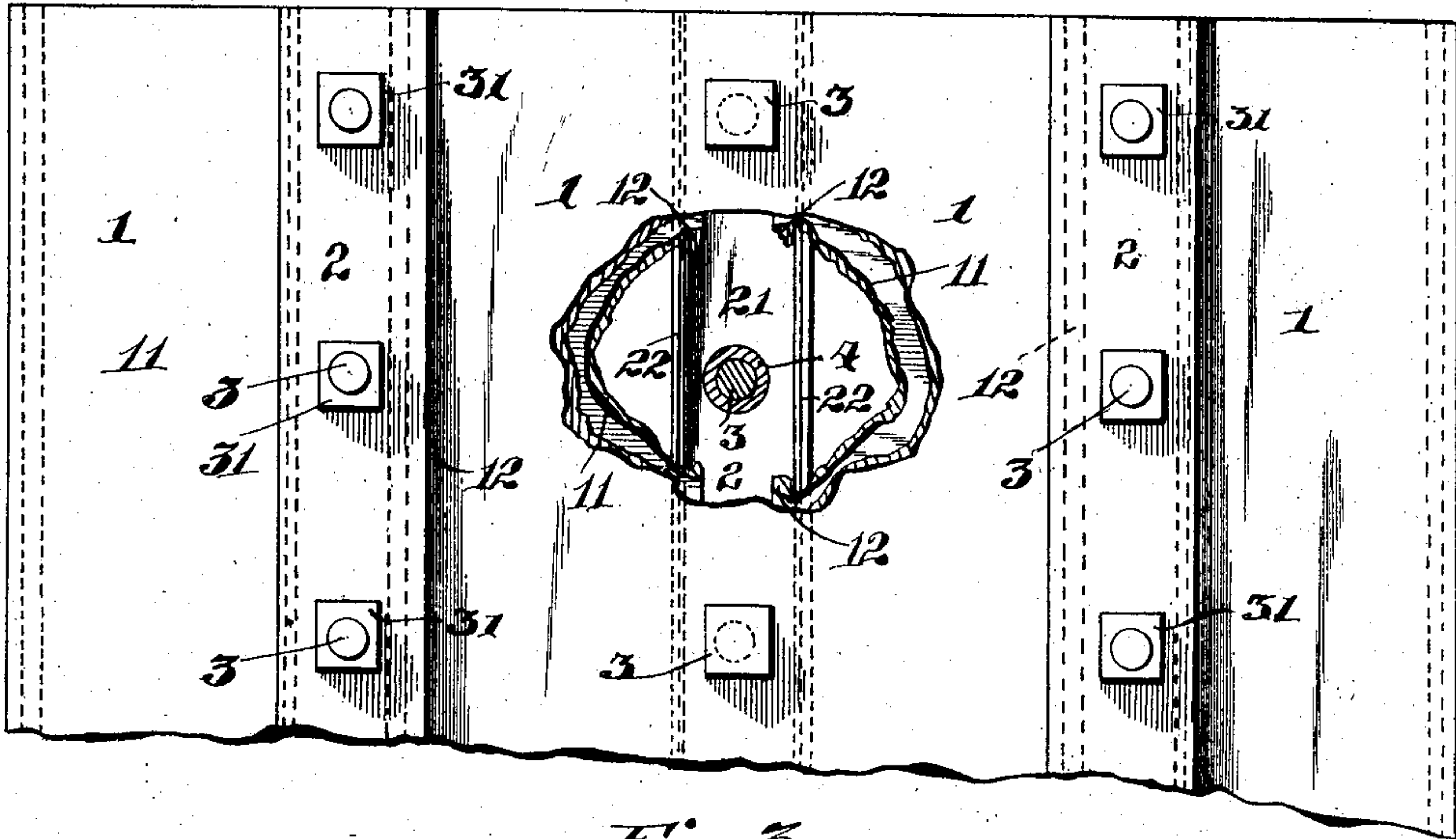
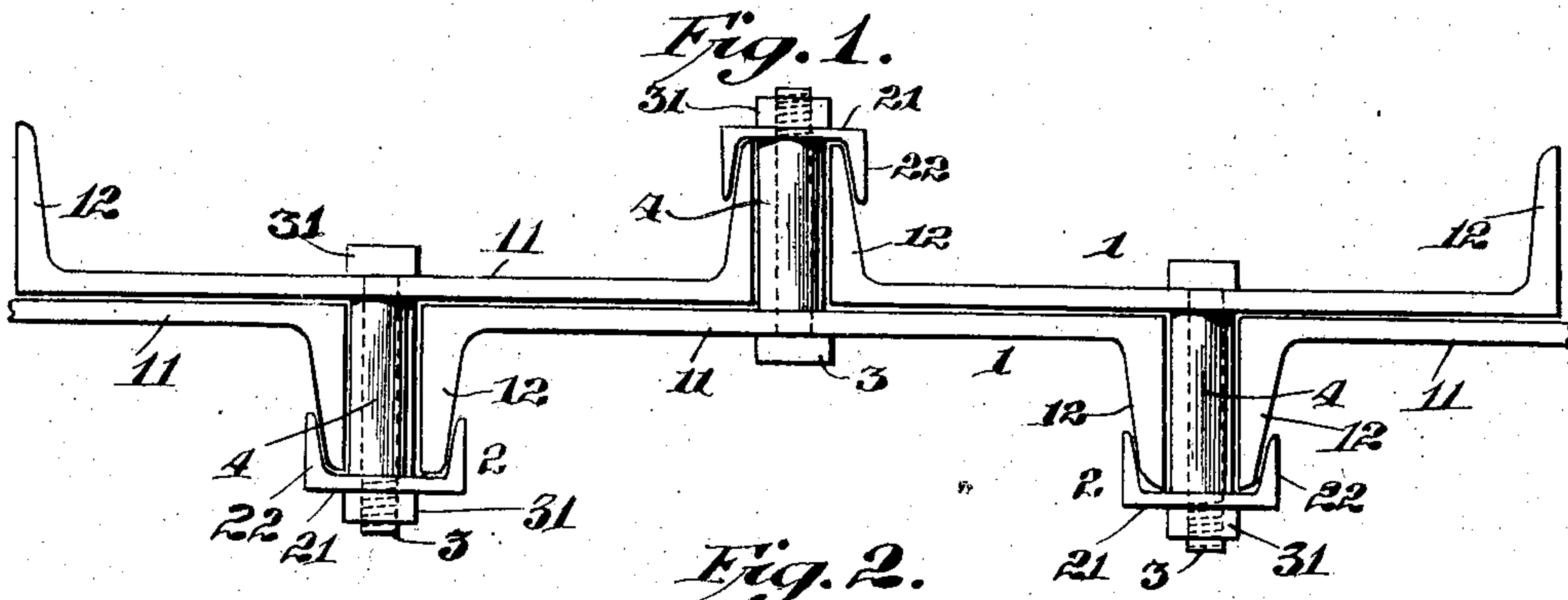


No. 834,086.

PATENTED OCT. 23, 1906.

C. C. TOMKINSON.
SHEET PILING.
APPLICATION FILED NOV. 18, 1905.



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UNITED STATES PATENT OFFICE.

CHARLES COOKMAN TOMKINSON, OF PLAINFIELD, NEW JERSEY.

SHEET-PILING.

No. 834,086.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed November 18, 1905. Serial No. 287,938.

To all whom it may concern:

Be it known that I, CHARLES COOKMAN TOMKINSON, a citizen of the United States, and a resident of Plainfield, county of Union, and State of New Jersey, have invented certain new and useful Improvements in Sheet-Piling, of which the following is a specification.

My invention relates to piles, and particularly to interlocking piles used in sheet-piling and the like. Its object is to provide a pile which will be cheaply constructed, shall be very rigid and easily driven, shall interlock with great rigidity, and shall be economical because of its being made of standard sections and of which the salvage when the pile is pulled up shall be practically complete.

Further objects of the invention will appear in the specification and will be pointed out in the claims.

In the drawings, Figure 1 is a top plan view of a section of sheet-piling embodying my invention. Fig. 2 is a partial front elevation of the same. Fig. 3 is a view similar to that of Fig. 1, showing a modified construction of the piles.

Referring to Figs. 1 and 2 of the drawings, each pile consists of a trough-shaped beam 1, shown as a channel-beam of standard section having a web 11 and flanges 12. Secured behind the rear face of the web 11 and in vertical alinement therewith at its middle point is a second channel-beam 2, having a relatively narrow web 21 parallel with the web 11 of the beam 1 and having lateral flanges 22 projecting toward the beam 1. The beams 1 and 2 are secured together by a bolt 3 and nut 31, a sleeve 4 being slipped over the bolt 3 to space the beams 1 and 2 a proper distance apart. As will be clearly seen in Fig. 1 of the drawings, this distance is such as to receive the lateral flange 12 of the channel-beam 1 of the adjacent pile, so that the flange 12 is received in a recess formed of a portion of the web 11 of the channel-bar 1, the flange 22 of the channel-bar 2, and the sleeve 4, which forms a spacing means between the two spacing-bars. As each flange 12 is interlocked in a similar way, it will be seen that the pile practically consists of a double thickness of the web 11 of the bars 1, the rigidity of which is increased by the flanges 22. It will be seen in Fig. 2 that the bolts 3 are disposed at convenient distances in a vertical line, so that the piles are very rigid and very solidly interlocked.

Fig. 3 shows a modified form of the device

which is advantageous where a somewhat cheaper and less rigid sheet-piling is required. In this case the channel-bar 1 is pierced for the reception of two vertical lines of bolts 3, each line being at a short distance from the edge of the web 11. Each bolt 3 is as before surrounded by a sleeve 4 and acts in connection with the nut 31 to secure behind the rear face of the web 11 of the beam 1 a second beam 2. The interlocking of the flanges 12 of the adjacent beams in the recess formed as before by a portion of the web 11 of the large beam 1, the flange 22 of the smaller beam 2, and the spacing-sleeve 4 will be readily understood from an inspection of the drawings. It will be seen that the beams 2 are as before channel-beams; but it is obvious that one of the lateral flanges 22 of each of these beams has no function and might be dispensed with. In practice, however, I prefer to use the small channel-beam because it is a rolled section of standard pattern and can be easily procured in market, besides having a practically unimpaired value when the pile is pulled up. It will be seen that in both cases the webs 11 of the main channel-bars 1 are securely held together back to back, so as to form a very rigid sheet and so as to quickly rust together if a tight sheet-piling, as for coffer-dam work, is required.

By the term "rear face" as applied to a trough-shaped or "channel" beam I of course refer to that side of the web opposite to that from which the flanges project.

In a copending application of even date herewith, filed November 18, 1905, Serial No. 287,939, I have shown and claimed interlocking piles composed of beams spaced apart by timber or wood fillers or the like. It is clear that I do not herein claim any of the specific features shown and claimed in that application. In that application I have also shown a variety of corner-piles and a form of shoe adapted to be secured to the lower end of each pile. It will be seen that the piles of the present application may be locked together at any desired angle by any of the means shown in that application or by any well-known means and that any convenient shoe may be applied to the foot of each of the piles of the present case. It is also clear that modifications other than those shown may be made in the form of the device without departing from the spirit of the invention.

The advantages of my invention are the simplicity of construction of the piles, owing

to the fact that they are made of standard rolled sections which can be purchased in open market, the ease with which they may be driven in their interlocked position, and
 5 the practically complete salvage which results when the piles are withdrawn by reason of the fact that the taking out of the bolts 3 leaves the metal beams in practically as useful condition as before the piles were driven.

10 What I claim is—

1. An interlocking pile comprising a trough-shaped beam, a second beam having a flange secured at the rear face of said trough-beam with its flange projecting theretoward, and
 15 spacing means between said beams, whereby a recess is formed between the web of the trough-beam, the flange of the second beam and the spacing means for the reception of the flange of a second trough-beam to be interlocked therewith.

2. An interlocking pile comprising a trough-shaped beam, a second trough-shaped beam having a relatively narrow web secured at the rear face of said first-named beam with
 25 its lateral flange projecting theretoward, and means interposed between said beams, whereby a recess is formed by the web of the first-named beam, the flange of the second-named beam and the spacing means for the
 30 reception of a flange of the trough-shaped beam of an adjacent pile to be interlocked therewith.

3. An interlocking pile comprising a trough-shaped beam, a beam having a flange, a bolt
 35 for securing said second-named beam at the rear face of said first-named beam, and a sleeve on said bolt for spacing said beams apart, said second-named beam having its flange projecting toward the rear face of said
 40 first-named beam and forming therewith and with said sleeve a recess for the reception of the flange of a second trough-shaped beam to be interlocked therewith.

4. An interlocking pile comprising a trough-shaped beam, two beams of relatively narrow
 45 web, each having a flange and each secured

at the rear face of said first-named beam adjacent the edge of its web with said flange projecting theretoward, and spacing means between said first-named beam and each of
 50 said second-named beams, whereby a recess is formed adjacent each edge of said first-named beam between the web thereof, the flange of one of said second-named beams and the spacing means for the reception of the
 55 flange of a second trough-shaped beam to be interlocked therewith.

5. Sheet-piling comprising a plurality of similar interlocking piles, each comprising a trough-shaped beam, a second beam having
 60 a flange and secured to the rear face of said trough-shaped beam with its flange projecting theretoward, and spacing means between said beams, whereby a recess is formed by the web of the trough-shaped beam, the
 65 flange of the second-named beam and the spacing means for the reception of the flange of the trough-shaped beam of the adjacent pile.

6. Sheet-piling composed of a plurality of
 70 similar interlocking piles, each comprising a trough-shaped beam, two beams of relatively narrow web, each having a flange and each secured at the rear face of said trough-shaped beam adjacent the edge of its web with said
 75 flange projecting theretoward, and spacing means between said first-named beam and each of said second-named beams, whereby a recess is formed adjacent the edge of said first-named beam between the web thereof,
 80 the flange on one of said second-named beams and one of the spacing means for the reception of the flange of the trough-shaped beam of the adjacent pile.

In testimony whereof I have signed this
 85 specification in the presence of two subscribing witnesses.

CHARLES COOKMAN TOMKINSON.

Witnesses:

J. D. FLACK,
 L. C. BIGLOW.