

No. 613,693.

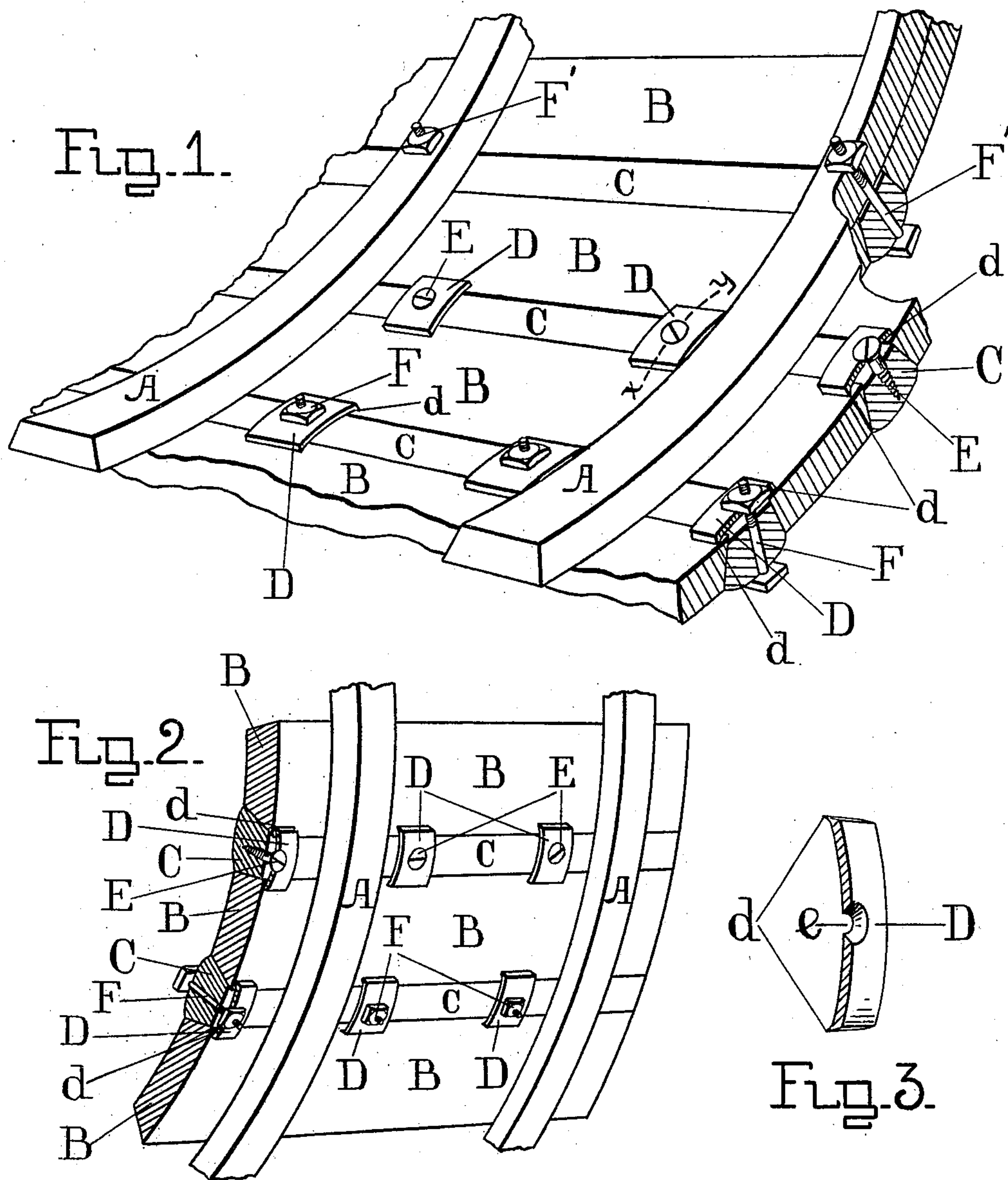
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J. E. LIDDY.

MEANS FOR MAKING SEAMS OF VESSELS FLUID TIGHT.

(Application filed Mar. 3, 1898.)

(No Model.)



Witnesses.

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MEANS FOR MAKING SEAMS OF VESSELS FLUID-TIGHT.

SPECIFICATION forming part of Letters Patent No. 613,693, dated November 8, 1898.

Application filed March 3, 1898. Serial No. 672,431. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. LIDDY, a citizen of the United States of America, residing at Clayton, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in the Art of and Means for Making the Seams of Vessels Fluid-Tight; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to making fluid-tight joints in such vessels as have seams of considerable prolongation and which will permit of a calking-strip being inserted therein, whether such vessel be employed to hold or be immersed in the fluid, and which means may be readily adjusted in place, removed, or repaired by a mechanic of ordinary skill in the art and with material that can be easily and economically produced and is particularly adapted for use in small vessels, such as skiffs, which in the nature of their employment are alternately launched and used in the water and drawn out and left on land, as occasion demands. It can, however, be also advantageously employed in any structure where a fluid-tight joint calked with a substantially rigid strip of any considerable length can be used. These objects I attain by the means described herein, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my invention as applied to the side of a boat, with the end thereof in section, showing clearly my preferred manner of adjusting and fastening the calking-strips between the strakes of the boat. Fig. 2 is a perspective view of my said invention as applied to a cistern or fluid-containing vessel. Fig. 3 is an enlarged view of the metal clip D, sectionalized on the line X Y in Fig. 1.

Similar letters refer to similar parts throughout the several views.

A A represent the transverse ribs or frames, which may be of wood, iron, or other suitable material. To these I permanently secure (by means of nails or other suitable fastenings) a series of longitudinal strakes or staves B B, the adjacent edges of which shall not be in contact with each other, and then pass a side-

cutting plane or other suitable routing-tool along and between these parallel edges, so as to form an opening along the length of and between the edges of said strakes, which opening shall be of uniform shape transversely of its course and have uniformly-beveled sides, with their greatest distance apart on the edges away from said ribs. Into this longitudinal beveled opening I then insert a calking-strip C of uniform width and bevel corresponding with the bevel of said opening, but in width preferably a little greater than the width of said opening, so that when fully seated by the means hereinafter described the said strip shall not touch the said ribs. For fastening the said strips in place I prefer to employ metal cleats or clips D, having an amount of resiliency sufficient to at all times automatically hold said strip firmly within its seat between said strakes or staves and thereby take up any looseness of the joint occasioned by shrinkage; but it is apparent that non-resilient clips or cleats of other material may be employed to perform a like office, or where the said transverse ribs are sufficiently close together they may be used in place of the clip D for holding in place the heads of the screws E or the nuts of the bolts F, as shown at F' in Fig. 1, where a part of the rib, strip, and strakes are broken away to show such construction. When these metal clips or cleats are employed, they are made of sufficient length to span the said opening and preferably have their outer ends *d d* bent over, so as to bear their edges against the adjacent surface of said strakes or staves, and when said strakes are of wood or soft material enter the same, so as to prevent rotation of said clip. At or near the center of said clip is made a hole *e* large enough to permit the passage therethrough of the shank of a screw E or bolt F employed to hold the strip in place and small enough to prevent the passage therethrough of the head of the screw E or the nut of the bolt F.

After fitting the strip C into the seam to be filled in the manner aforesaid I mark thereon the location of the contiguous ribs A A, and at suitable distances between said ribs I attach to the narrowest side of such strip the clips D by means of screws driven through

the hole *e* into the substance of the strip C, as shown in Figs. 1 and 2. I leave the clips loose enough to turn on the shank of the screw in the manner of a casing-button and
 5 turn them longitudinally of the strip, so that the strip with the clips thereon can be passed in between the strakes B B. I then place the strip in position between the strakes and, turning the clips so as to span from one strake
 16 to the other, drive the screw farther into the strip C until the strip and clip are both held firmly in place. It is evident that to remove said strip it is only necessary to loosen the screws and turn the clips again longitudinally,
 15 when the strip can be withdrawn. It is also manifest that should said strip shrink or become loosened in any manner it can be easily tightened in place by forcing the screws farther into the body of the strip while the clips
 20 are spanning from strake to strake; but ordinarily the resiliency of the clips will be sufficient to keep said strip automatically adjusted in place. It is further apparent that where employed on heavy work or the nature
 25 of the material demands it screw-bolts may be employed in place of the screws, as is shown at F in Figs. 1 and 2, in which case the nut of the bolt would bear against said clip in place of the head of the screw, and,
 30 further, that when said strips are attached to said ribs, as aforementioned, the use of said clips or cleats would be unnecessary.

For routing out the space between the strakes, as above described, either a side-
 35 cutting plane may be employed or a revolving mill or cutter driven by power. With the latter the work could be performed very correctly and expeditiously, and I therefore prefer that mode of doing it. It is also ap-
 40 parent that a strip of fibrous packing material could be placed between the edges of said strakes and the strip C aforesaid for the pur-

pose of filling any irregularities that might occur between the two surfaces.

Having now described my said improved 45 art of and means for making the seams of vessels fluid-tight, what I claim as my invention, and desire to secure by Letters Patent, is—

1. A fluid-tight joint for vessels, comprising strakes or staves, arranged on transverse 50 frames or ribs, and having separated parallel edges chamfered on a bevel opening from said ribs, calking-strips having corresponding reversedly-beveled edges adapted to closely fit, and substantially fill, the opening between 55 such parallel edges, and means for adjustably fastening said strips to said ribs.

2. A fluid-tight joint for vessels, comprising strakes or staves, arranged on transverse 60 frames or ribs, and having separated parallel edges chamfered on a bevel opening from said ribs, calking-strips having corresponding reversedly-beveled edges adapted to closely fit, and substantially fill, the opening between 65 such parallel edges, and clips or cleats, adapted to span said opening, and means for fastening said clips or cleats to said strips.

3. A fluid-tight joint for vessels, comprising strakes or staves, arranged on transverse 70 frames or ribs, and having separated parallel edges chamfered on a bevel opening from said ribs, calking-strips having corresponding reversedly-beveled edges adapted to closely fit, and substantially fill, the opening between 75 such parallel edges, and clips or cleats of resilient material adapted to span said opening, and means for fastening said clips or cleats to said strips.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

JOHN E. LIDDY.

Witnesses:

ROBERT E. WATERMAN,
 JOSEPH Y. CHAPIN.