H. L. HASKELL.

BOAT AND CANOE.

APPLICATION FILED OCT. 13, 1917.

1,298,042.

Patented Mar. 25, 1919.

3 SHEETS—SHEET 1.

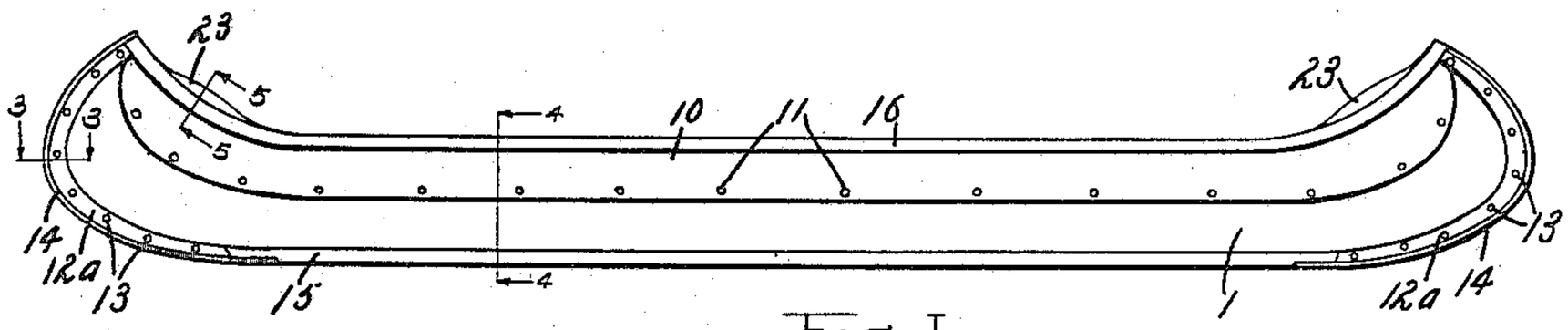

Fig. I.

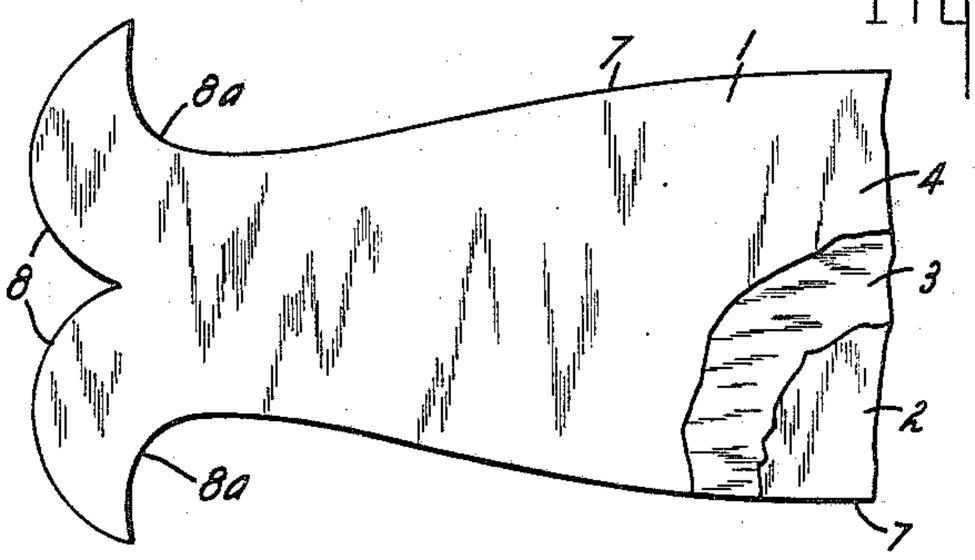

Fig. VI.

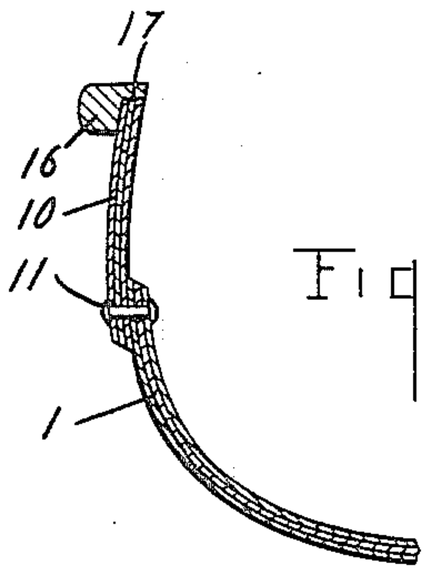

Fig. IV.

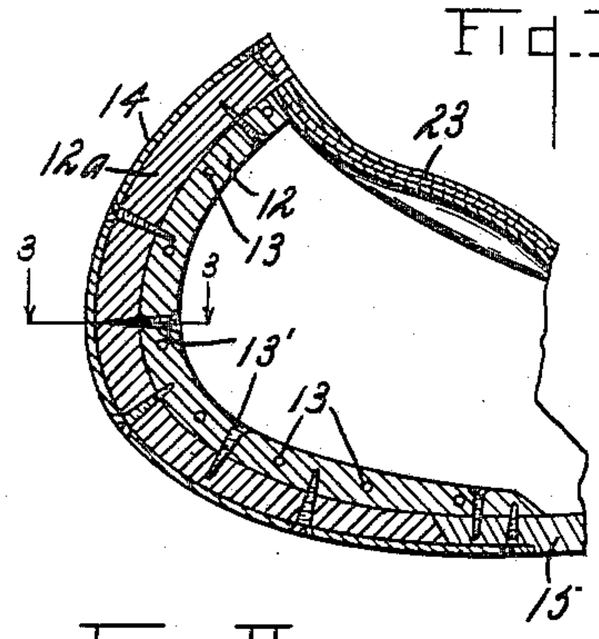

Fig. II.

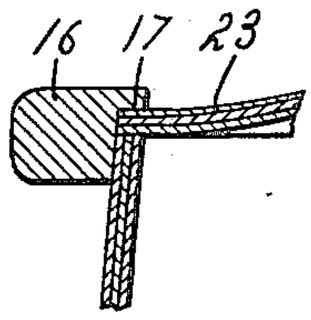

Fig. V.

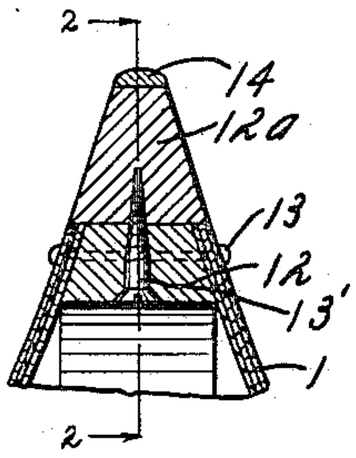

Fig. III.

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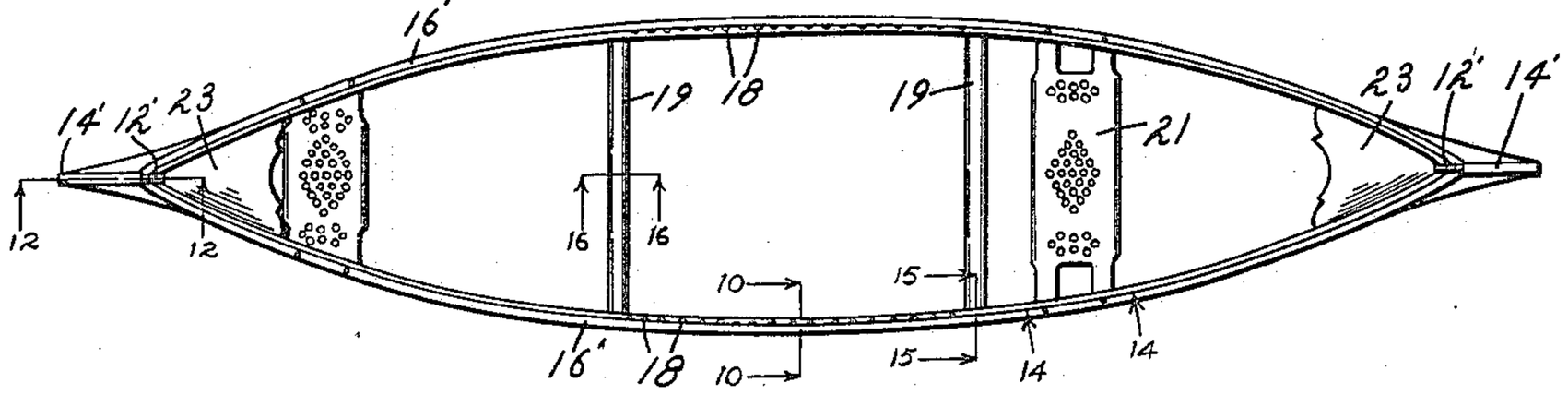

Fig. VII.

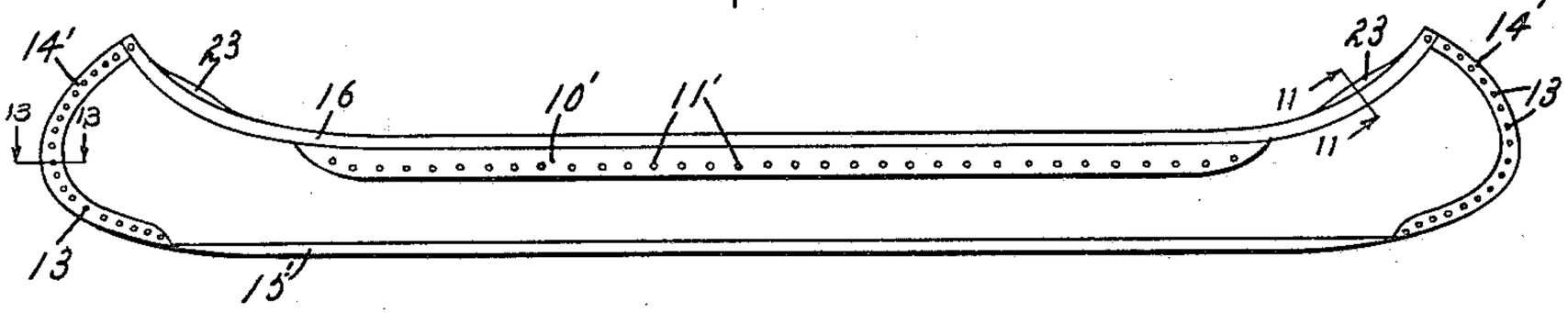

Fig. VIII.

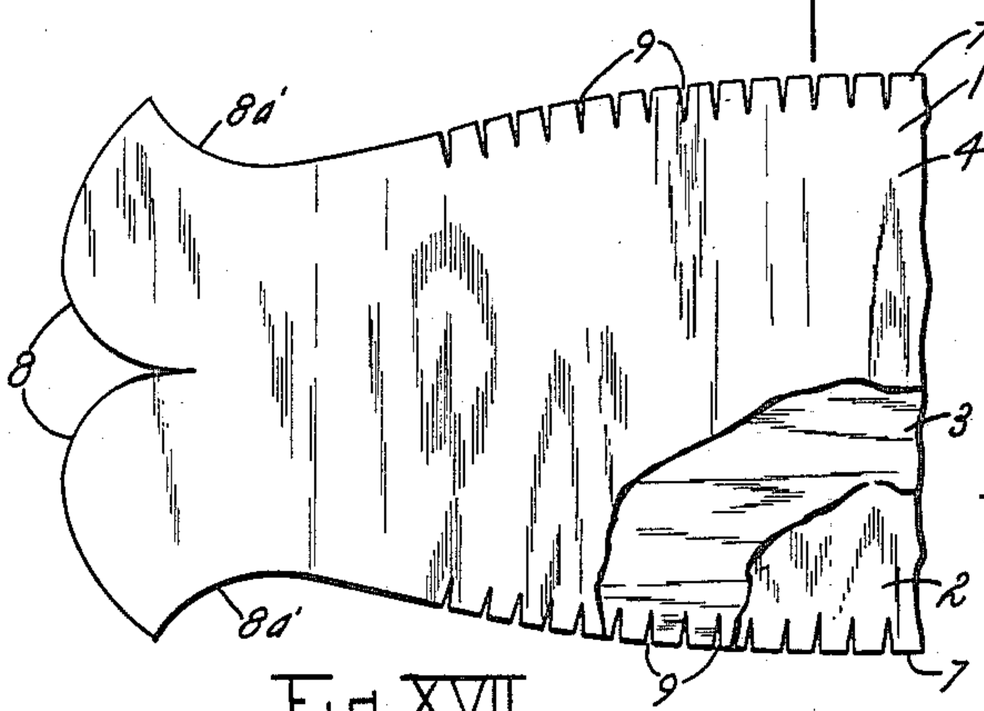

Fig. XVII.

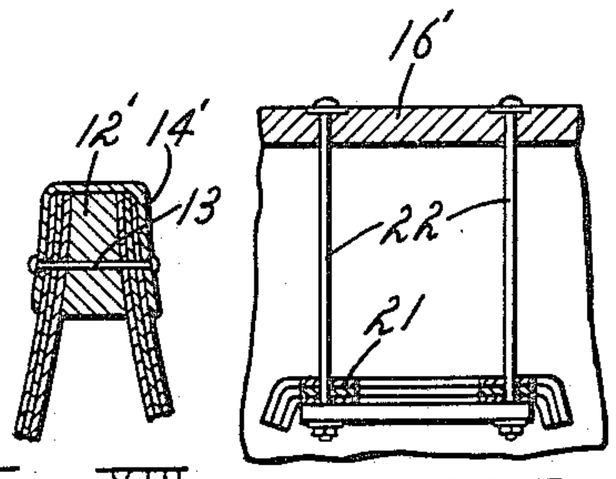

Fig. XIII.

Fig. XIV.

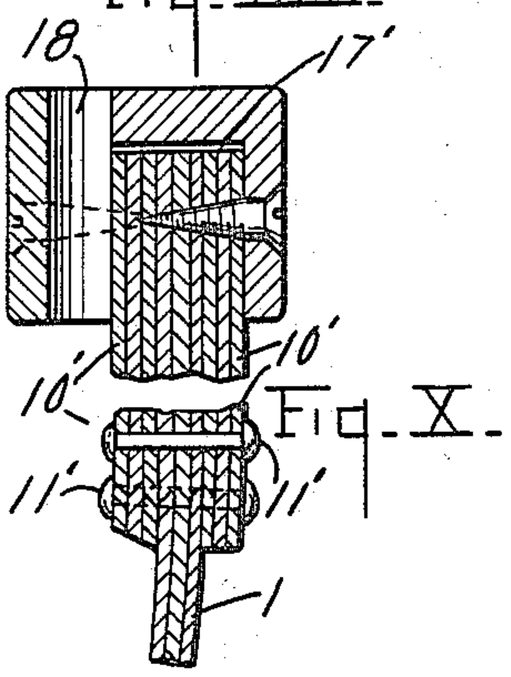

Fig. X.

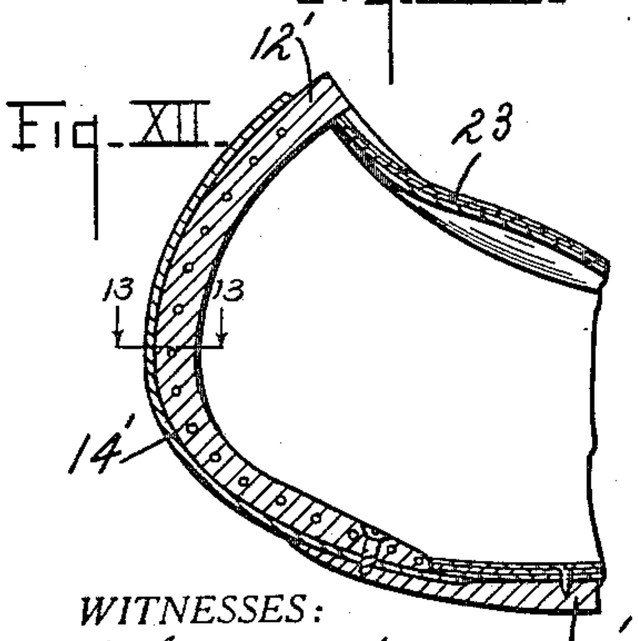

Fig. XII.

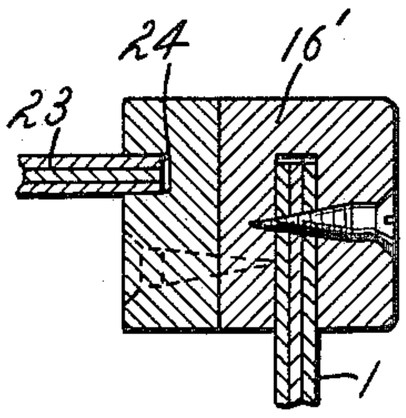

Fig. XI.

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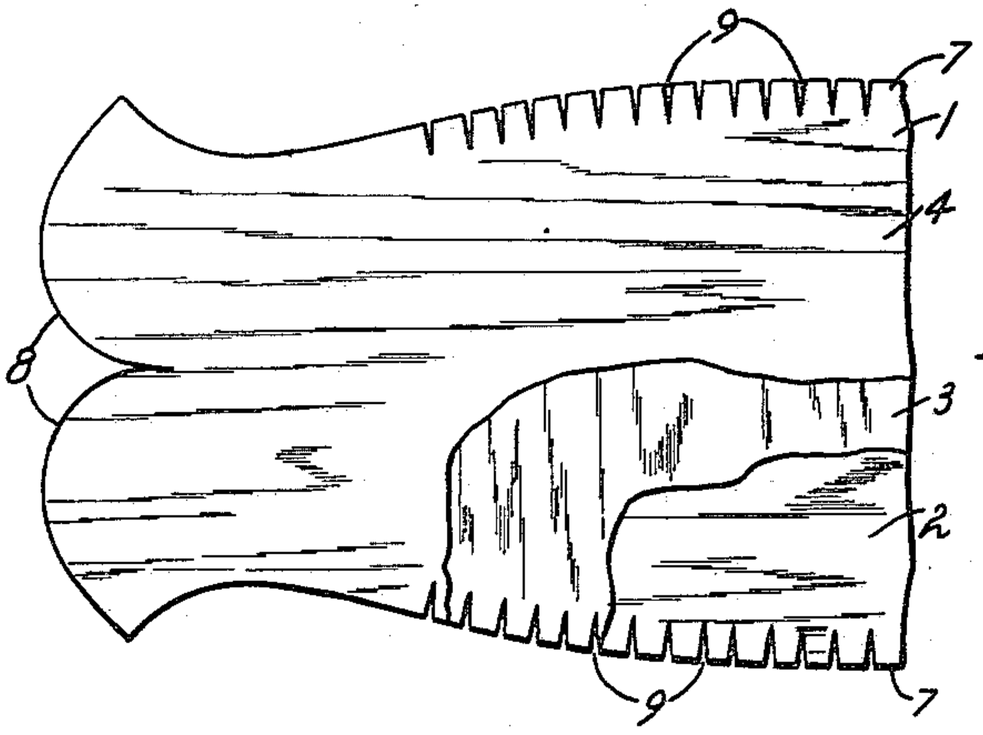

Fig. XVIII.

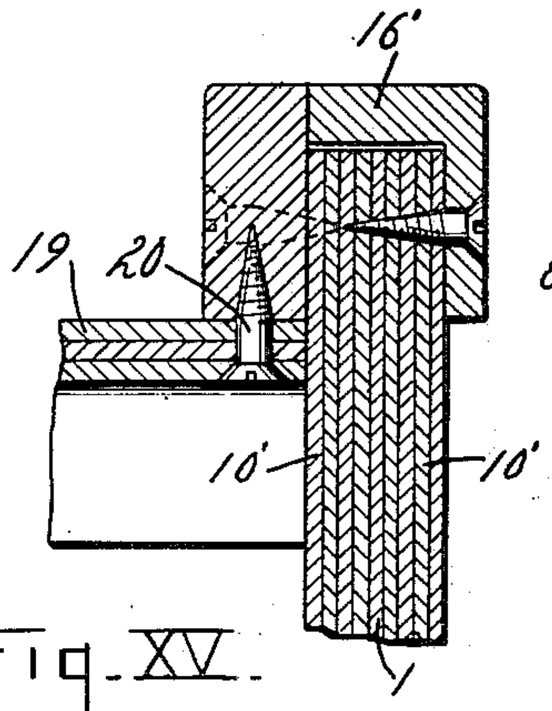

Fig. XV.

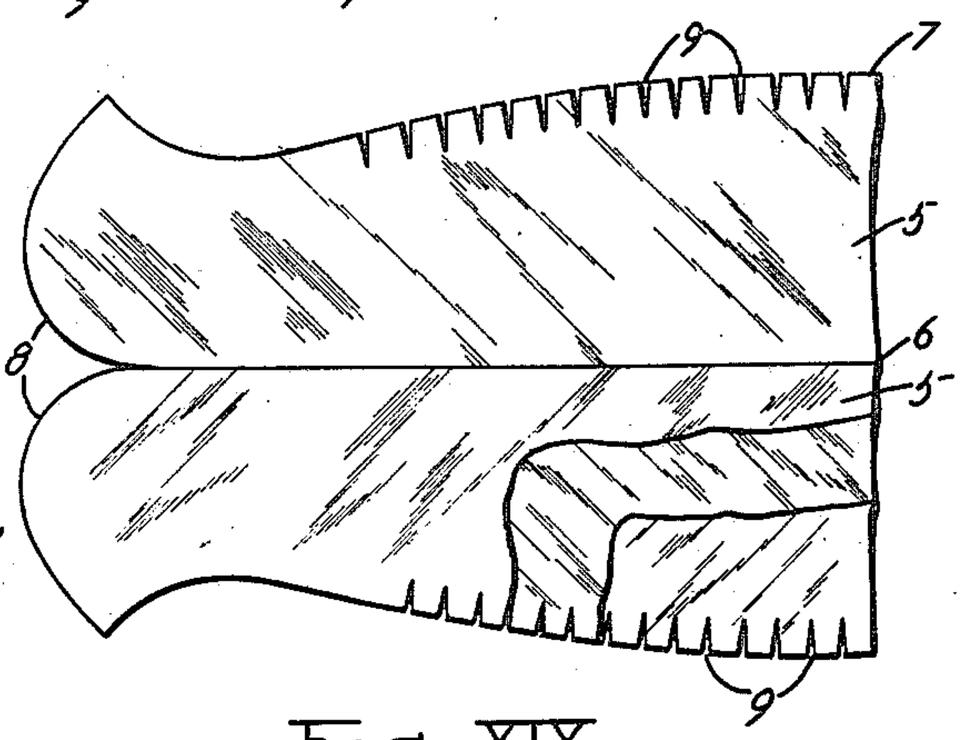

Fig. XIX

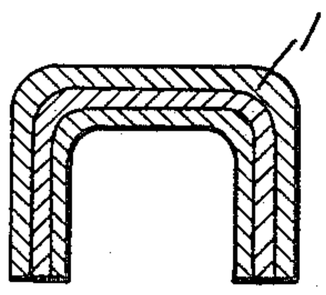

Fig. XVI.

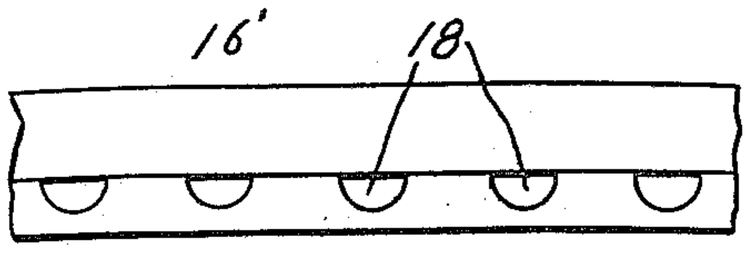

Fig. IX.

Witness
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Luther Blake

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Attorney

UNITED STATES PATENT OFFICE.

HENRY L. HASKELL, OF LUDINGTON, MICHIGAN, ASSIGNOR TO HASKELITE MANUFACTURING CORPORATION, OF GRAND RAPIDS, MICHIGAN, A CORPORATION OF MICHIGAN.

BOAT AND CANOE.

1,298,042. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed October 13, 1917. Serial No. 196,420.

To all whom it may concern:

Be it known that I, HENRY L. HASKELL, a citizen of the United States, residing at Ludington, county of Mason, State of Michigan, have invented certain new and useful Improvements in Boats and Canoes, of which the following is a specification.

This invention relates to improvements in boats and canoes.

The main objects of this invention are:

First, to provide an improved boat or canoe which is light in weight and at the same time strong and rigid and capable of withstanding very severe shocks and strains.

Second, to provide an improved boat or canoe in which such seams or joints as are present are formed so that they are not likely to open when in use or when exposed to the weather.

Third, to provide an improved boat or canoe, the walls of which are formed from multiple-ply veneer, the plies of which are secured together by a waterproof glue or cement which renders the walls water proof and retains them in the form to which they are conformed.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

Structures which include a preferred embodiment of my invention are clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure I is a side elevation of a canoe embodying my invention.

Fig. II is an enlarged detail section on a line corresponding to line 2—2 of Fig. III.

Fig. III is an enlarged detail section on a line corresponding to line 3—3 of Figs. I and II.

Fig. IV is an enlarged detail section on a line corresponding to line 4—4 of Fig. I.

Fig. V is an enlarged detail section on a line corresponding to line 5—5 of Fig. I.

Fig. VI is a detail plan view of the veneer blank from which the canoe is formed, the superimposed plies being broken away to show the disposition of the grain of the plies.

Fig. VII is a plan view of a slightly modified embodiment of my invention, the modification being in the gunwales and in the width of the side pieces.

Fig. VIII is a side elevation of the embodiment of my invention shown in Fig. VII.

Fig. IX is a detail plan of a portion of a gunwale.

Fig. X is a detail vertical section on a line corresponding to line 10—10 of Fig. VII, showing details of the gunwale and of the walls.

Fig. XI is an enlarged detail section on a line corresponding to line 11—11 of Fig. VIII, showing further structural details.

Fig. XII is an enlarged detail longitudinal section on a line corresponding to line 12—12 of Fig. VII.

Fig. XIII is a detail horizontal section through one of the stems on a line corresponding to line 13—13 of Figs. VIII and XII.

Fig. XIV is an enlarged detail section on a line corresponding to line 14—14 of Fig. VII, showing details of the seat support.

Fig. XV is an enlarged detail section on a line corresponding to line 15—15 of Fig. VII, showing details of the thwarts or cross members.

Fig. XVI is an enlarged detail section on a line corresponding to line 16—16 of Fig. VII, showing further details of the thwarts or cross members.

Fig. XVII is a detail plan view of the veneer blank from which the canoe body is formed, the superimposed plies being partially broken away to show the disposition of the grain of the plies.

Fig. XVIII is a detail plan view similar to that of Fig. XVII, showing the plies arranged with the grain disposed in another relation.

Fig. XIX is a detail plan view similar to that of Figs. XVII and XVIII, showing the blank from which the walls are formed made up of two pieces of veneer but united along the center line thereof.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

The walls of my improved boat or canoe are formed from multiple-ply wood veneer, the plies of which are united throughout by

a cement or glue which is waterproof but which softens under the action of heat, thereby permitting the conforming of the walls after the sheets of veneer are built up in the usual manner. The form employed by me and the means by which this heating is effected and the method or process of manufacture is made the subject matter of another application and is described in detail in such application, and I, therefore, do not enter into such details herein.

The body, or wall, is preferably conformed from an integral blank 1 of veneer formed from three plies, as 2, 3, and 4, see Figs. VI, XI and XVII, which are, as stated, united throughout by a waterproof glue or cement. In the blanks shown in Figs. VI and XVII the plies are disposed with the grain of the center ply 3 extending longitudinally and that of the outer plies 2 and 4 transversely. This arrangement of plies I generally prefer, although the plies may be arranged as shown in Fig. XVIII, in which the outer plies are disposed with the grain running longitudinally and the inner ply with the grain transversely. The blank shown in Fig. XIX is formed of two sections 5 but united at 6. These sections are arranged with the grain running diagonally.

The blank 1 of the embodiment of my invention shown in Figs. I to VI, inclusive, has outwardly curved longitudinal edges 7 and reversely curved end edges 8 which are united by a comparatively abrupt outwardly extending curve 8^a. When the blank is conformed the sides are bulged or curved somewhat and the longitudinal edges then assume a substantially straight line, as shown in Fig. I. The reversely curved ends are brought together to form the curved ends of the canoe, as shown in Figs. I and II.

The longitudinal edges of the canoe are reinforced and heightened by the side strips 10, also formed of multiple-ply veneer, as shown in Fig. IV, the side strips being lapped upon these walls at their edges and secured by the rivets 11.

The inner stems 12 are disposed between the end edges of the walls which are secured thereto, as by means of the rivets 13. The outer stems 12^a are secured to the inner stems 12 by means of screws 13′ and abut the end edges of the walls. Cut-waters 14 are secured to the outer stems, as shown in Figs. II and III.

The keel 15 is of such length as to overlap the inner stems and is secured thereto, as by screws, as shown in Fig. II. The outer stems are somewhat shorter than the inner stems and abut the ends of the keel, the joint being overlapped by the cut-waters, as shown in Fig. II.

The gunwales are rabbeted, as shown at 17, in their under sides to receive the edges of the walls and the edges of the end boards or short decks 23, which are also formed of multiple-ply veneer,—see Figs. IV and V.

The blanks 1, shown in Figs. XVII, XVIII and XIX, from which the modified embodiment of my invention is manufactured are somewhat wider for the same size of boat than that disclosed in Fig. VI, thereby making the curves $8^{a\prime}$ shallower and less abrupt than the corresponding curves 8^a shown in Fig. VI. By thus increasing the width of the blank the reinforcing side strips 10′ need not be so wide as the reinforcing strip 10 shown in Fig. I. To prevent the bulging of the longitudinal edges when this wide blank is conformed V-shaped notches or strips 19 are formed therein. The reinforcing strips 10′ are secured to the upper edges of the walls by means of the rivets 11′.

In this form of my invention I provide but a single stem 12′ at each end of the boat. These stems are disposed between the end edges of the walls, which are secured thereto by means of rivets 13, which also secure the cut-waters 14′, which are channel shaped in cross section and fit over the ends of the walls and the stem, as shown in Fig. XIII. The keel 15′ is of such length as to overlap the stem and is secured thereto by screws, as shown in Fig. XII. The gunwales 16′ have longitudinal channels 17′ in their under sides adapted to receive the edges of the walls,—see Figs. X and XI. For convenience in manufacture the gunwales are formed of sections, as indicated in Fig. XI.

To facilitate draining, the gunwales have a series of holes 18 along their central portion,—see Figs. VII and IX. The cross members or supports 19 are formed of multiple plies of veneer conformed to a channel shape and secured to the gunwales, as by screws 20,—see Fig. XV. The seats 21 are also preferably formed of veneer, as indicated in Fig. XIV, and suspended from the gunwale by means of the rod-like hangers 22.

The end boards 23 are also formed of multiple plies of veneer secured by arranging the edges in the rabbets of the gunwales, as shown in Fig. V, or in the groove 24 in the inner edges of the gunwales, as shown in Figs. XI and XII.

By thus forming and arranging the parts, I provide a boat or canoe structure which is light in weight and at the same time is strong and rigid and capable of withstanding severe shocks and strains without opening its joints. The structure is economical to produce and very durable in use.

I have illustrated and described my improvements as embodied in a canoe. It will be understood that the shape and size may be varied as desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A boat comprising walls formed from

multiple-ply veneer, inner stems disposed between and to which the end edges of the walls are secured, outer stems secured to said inner stems and abutting the end edges of the walls, cut-waters secured to said outer stems, a keel disposed to overlap the lower ends of said inner stem and abut the outer ends of said outer stems, the inner ends of said cut-water overlapping the joint between said keel and said outer stems, gunwales extending from end to end and secured to the upper ends of said stems, the said gunwales being rabbeted on the under side to receive the longitudinal edges of the walls, and decks formed of multiple ply-veneer the edges of which are secured in the rabbets of said gunwale.

2. A boat comprising walls formed from multiple-ply veneer, inner stems disposed between and to which the end edges of the walls are secured, outer stems secured to said inner stems and abutting the end edges of the walls, cut-waters secured to said outer stems, a keel disposed to overlap the lower ends of said inner stems and abut the outer ends of said outer stems, the inner ends of said cut-water overlapping the joint between said keel and said outer stems, and gunwales extending from end to end and secured to the upper ends of said stems, the said gunwales being rabbeted on the under side to receive the longitudinal edges of the walls.

3. A boat comprising walls formed from multiple-ply veneer, inner stems disposed between and to which the end edges of the walls are secured, outer stems secured to said inner stems and abutting the end edges of said walls, cut-waters secured over said outer stems, a keel disposed to overlap the lower ends of said inner stems and abut the lower end of said outer stems, said cut-water overlapping the joint between the keel and said outer stem, and gunwales extending from end to end and secured to the upper ends of said stems, and having longitudinal channels in their under sides embracing the longitudinal edges of the walls.

4. A boat comprising walls conformed from an integral blank formed from a single sheet of three-ply veneer, the plies of which are united throughout by waterproof glue, the grain of the inner ply being disposed longitudinally and the grain of the outer plies being disposed transversely, the longitudinal edges of the blank being outwardly curved and the end edges being reversely curved, side strips of multiple-ply veneer lapped upon and secured to the said longitudinal edges after the walls are conformed, inner stems disposed between and to which the end edges of the walls are secured, outer stems secured to said inner stems and abutting the end edges of the walls, and gunwales extending from end to end and secured to the upper end of said stems.

5. A boat comprising walls conformed from an integral blank formed from a single sheet of three-ply veneer, the plies of which are united throughout by waterproof glue, the longitudinal edges of the blank being outwardly curved and the end edges being reversely curved, side strips of multiple-ply veneer lapped upon and secured to the said longitudinal edges after the walls are conformed, inner stems disposed between and to which the end edges of the walls are secured, outer stems secured to said inner stems and abutting the end edges of the walls, and gunwales extending from end to end and secured to the upper end of said stems.

6. A boat comprising walls conformed from veneer, side strips lapped upon and secured to the longitudinal edges of the walls after the walls are conformed, and stems to which the end edges of the walls are secured.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

HENRY L. HASKELL. [L. S.]

Witnesses:
W. H. HASKELL,
E. L. EDWARDS.