

(No Model.)

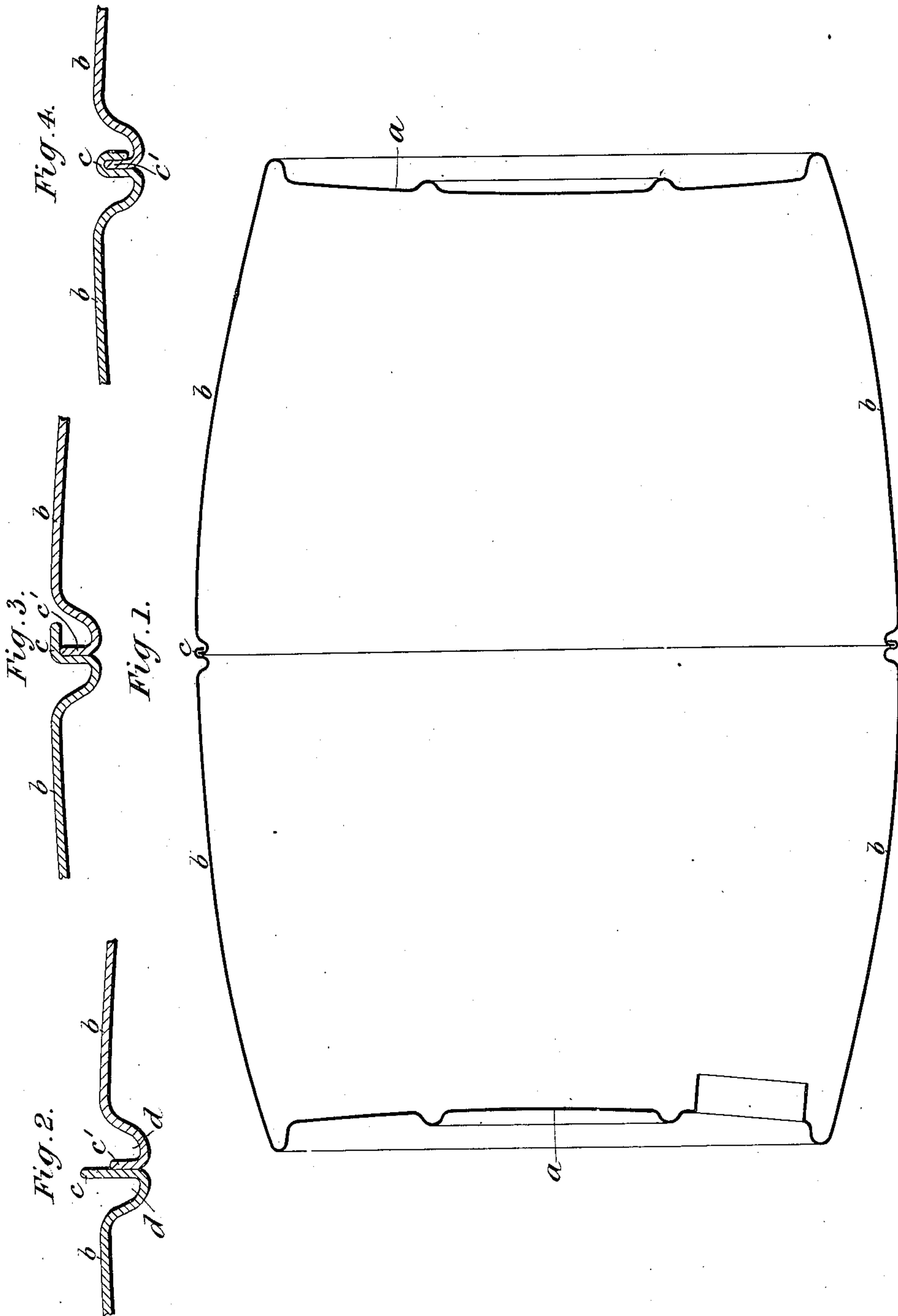
2 Sheets—Sheet 1.

D. CAIRD.

MANUFACTURE OF METAL BARRELS OR OTHER LIKE VESSELS.

No. 502,846.

Patented Aug. 8, 1893.



WITNESSES:

Fred White
C. K. Fraser.

INVENTOR:

David Caird
By his Attorneys
Arthur C. Fraser & Co

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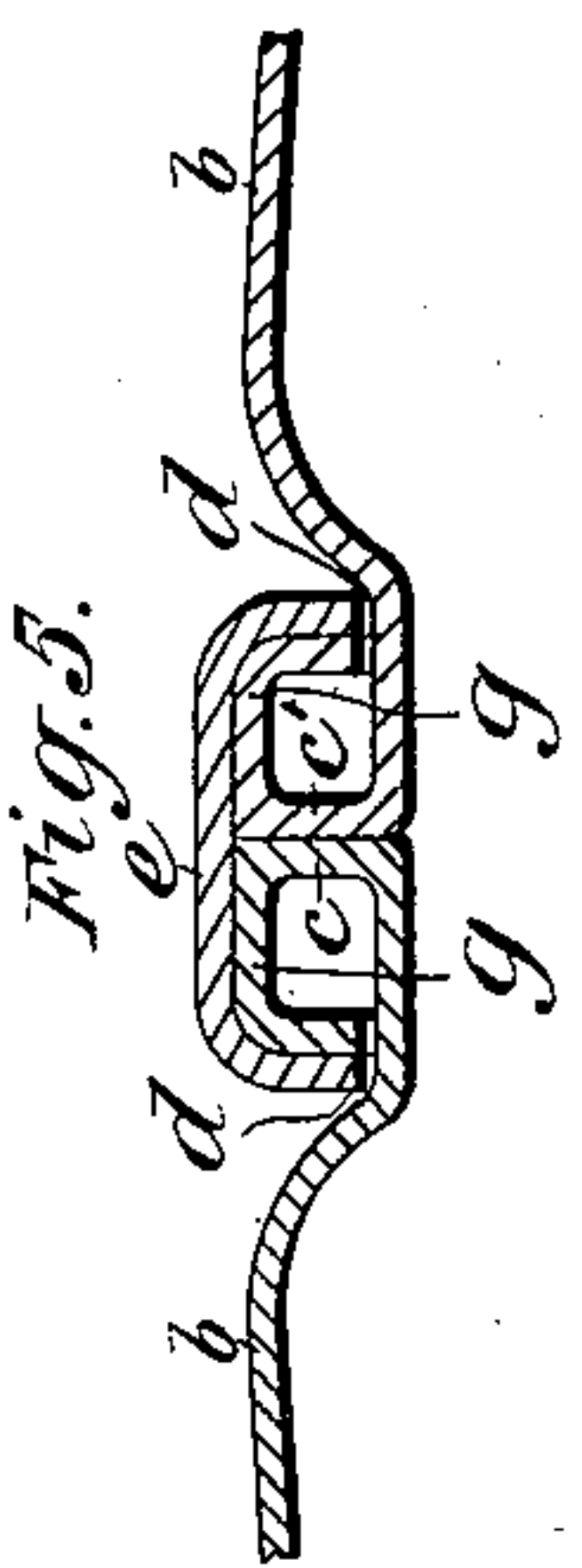
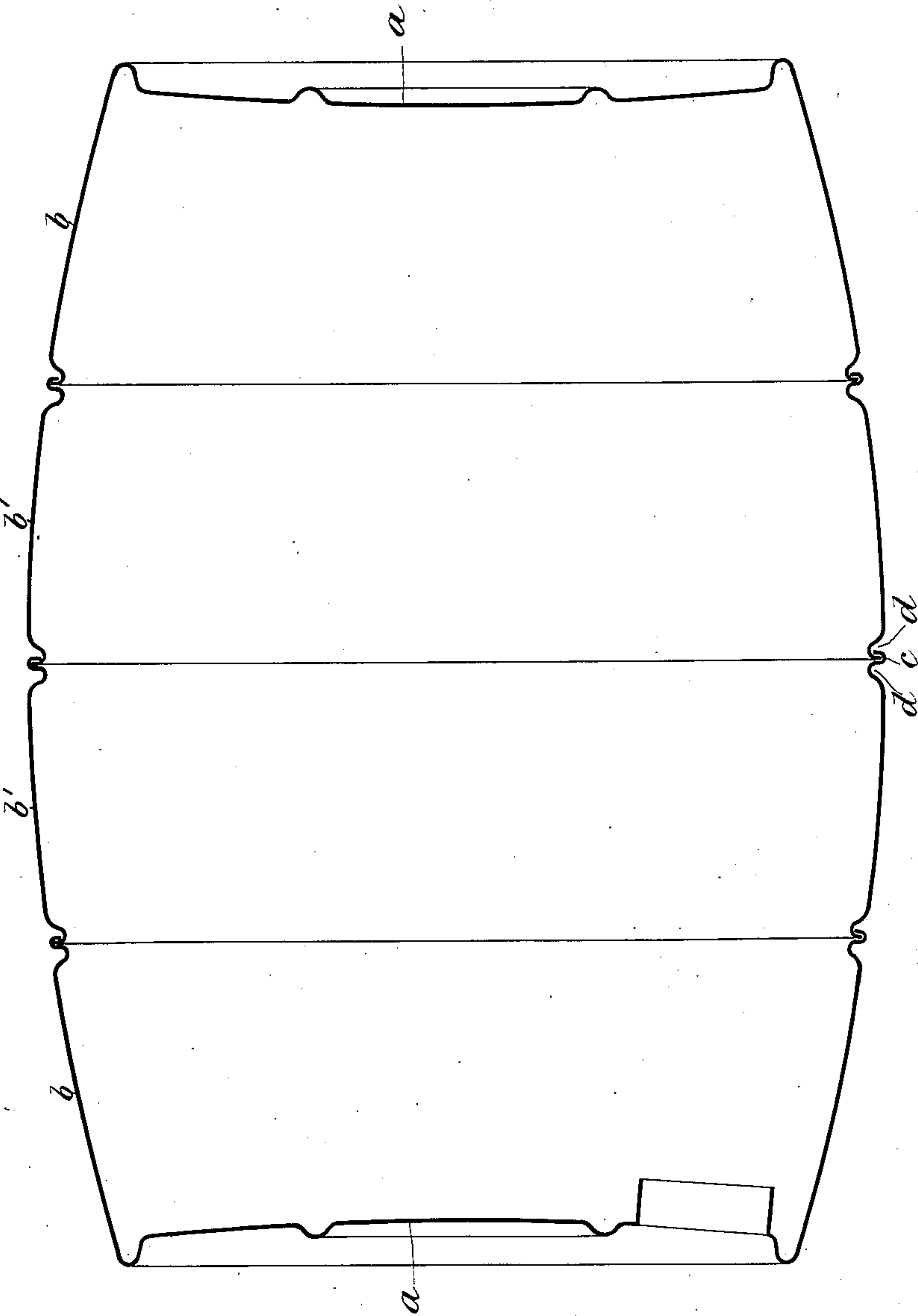


Fig. 8.



WITNESSES

Fred White
L. K. Fraser.

INVENTOR

David Caird

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UNITED STATES PATENT OFFICE.

DAVID CAIRD, OF LONDON, ENGLAND.

MANUFACTURE OF METAL BARRELS OR OTHER LIKE VESSELS.

SPECIFICATION forming part of Letters Patent No. 502,846, dated August 8, 1893.

Application filed October 14, 1892. Serial No. 448,798. (No model.) Patented in England August 7, 1891, No. 11,373, and in Belgium July 6, 1892, No. 100,400.

To all whom it may concern:

Be it known that I, DAVID CAIRD, of London, England, have invented certain new and useful Improvements in Metal Barrels and other Like Vessels, (which has been in part patented by me in Great Britain by Patent No. 11,373, bearing date August 7, 1891, and also in Belgium by Patent No. 100,400, bearing date July 6, 1892,) of which the following is a specification.

The object of my invention is to provide strong and liquid tight metal barrels and other like vessels.

My invention in its preferred form consists in a metal barrel, or other similar vessel, having a body consisting of two substantially circular hollow tubular parts each having an annular inwardly extending recess in its outer surface and an annular lateral flange beyond said recess, and abutting against and connected to the like flange of the other part, said flanges being of less projection than the depth of said recesses, whereby the joint between said parts is within their outer surfaces, and in certain other details of construction which will be hereinafter fully set forth.

In the accompanying drawings,—Figure 1 is a vertical section of a metal barrel or vessel made in accordance with my invention in halves which are connected together in the manner that I preferably adopt. Fig. 2 shows in longitudinal section a portion of each of the half barrels with their flanges butting against each other and ready to be connected together so as to form a liquid tight joint. Fig. 3 shows the same parts with the flange of the one half folded upon the flange of the other half, as in the intermediate position of forming the joint or connection between them. Fig. 4 shows the same parts with the flange of the one half doubled over behind the flange of the other half as when the joint or connection between them is complete. Figs. 5, 6 and 7 respectively illustrate modifications of the manner of forming the joint or connection between the half barrels. Fig. 8 represents a modification in which the barrel is made in four parts or sections which are connected together in the manner illustrated by Figs. 1 to 4. Figs. 1 and 8 are drawn to a smaller scale than the other figures.

In carrying out my invention I stamp or draw each half or part barrel out of a circular sheet or blank of metal. For the smaller sizes this can be effected by a series of stamping or drawing operations including the formation of a bung hole and of corrugations when required in the head or end; but for larger sizes it may be desirable to finish the body portion by spinning after the stamping or drawing operations. The half barrels having first been trimmed I next according to the preferred manner of manufacture form an out-turned flange around the edge of each half barrel, the flange on the one half barrel being wider than that on the other half barrel for the purpose about to be explained, and I also form a groove or recess around the periphery of each half barrel next its flange. Having thus made the two half barrels I place them together flange to flange either with or without a suitable packing and I then double or fold the flange of the wider flanged half over the flange of the other half and well press the two flanges together. The result is a liquid tight joint; if desired the joint thus made can be brazed or soldered. The finished joint should be somewhat below or under the bilge or belly of the barrel.

a a in Fig. 1 are the two barrel heads or ends and *b b* are the two half bodies, each half body being formed in a piece with the corresponding head *a* by stamping or drawing as hereinbefore described.

c and *c'*, Fig. 2, represent the flanges formed respectively on the two half bodies, and *d d* are the grooves or recesses formed around the half barrels next the flanges *c c'*. The depth of these grooves relatively to the width of the flanges is such that the finished joint is somewhat under the bilge of the barrel (see Fig. 4).

The half barrels *b b* having been placed flange to flange as seen in Fig. 2 the flange *c* is first folded upon the flange *c'* as seen in Fig. 3, and then doubled over behind the flange *c'* as seen in Fig. 4; this folding and doubling may be effected as in the process known as "seaming."

In the modified way of connecting the flanges which is illustrated in Fig. 5 the flanges *c, c'* have each a return flange *g*, and

instead of the joint between them being made by doubling the flange *c* over the flange *c'* as hereinbefore described, it is made by means of a hoop *e* which is put on hot over the flanges *c c' g g* and then has its edges while still hot turned down into the grooves *d d* so that as the hoop shrinks in cooling it will draw the half barrels *b b* together. Fig. 6 differs from Fig. 5 in that the flanges *c c'* are intumed instead of out-turned, the return flanges *g g* being dispensed with, and Fig. 7 is the same as Fig. 6 except that each of the flanges *c c'* has a circular corrugation or indentation *f*, so that the one corrugation or indentation fits into the other as seen in the figure and thus assists in making the barrel liquid tight, and also gives additional strength.

Although I preferably make the barrel or vessel in halves which are subsequently secured together as before described I do not limit myself to actual halves, as it is evident that one of the two parts may form more than half and the other less than half of the barrel; each part, however, will consist of one head or end of the vessel and part of the body. Again for larger barrels it may be more convenient to make each half or part in two pieces or sections as shown in Fig. 8, one piece comprising the head or end *a* and part *b* of the body, and the other piece *b'* being part of the body. All the parts or pieces will be flanged and connected together in the manner already described.

For the purpose of strengthening the barrel body it may be corrugated either longitudinally or circumferentially. Circumferential corrugations can be conveniently produced in the trimming machine; longitudinal corrugations can be produced by any suitable tool or appliance after the half body has been stamped or drawn.

The invention applies to the metal vessels of cylindrical form such for example as "drums," as well as to vessels having a swell or "belly" such as those shown in the drawings.

What I claim, and desire to secure by Letters Patent, is—

1. In a metal barrel, or other similar vessel,

a body consisting of two substantially hollow tubular circular parts each having an annular inwardly extending recess in its outer surface and an annular lateral flange beyond said recess, and abutting against and connected to the like flange of the other part, said flanges being of less projection than the depth of said recesses, whereby the joint between said parts is within their outer surface, substantially as and for the purpose set forth.

2. In a metal barrel or other similar vessel, a body consisting of two substantially circular hollow tubular parts *b b*, one of said parts having a laterally extending annular flange *c'* at its end having an outer abutting face, and the other of said parts having a like laterally extending annular flange *c* at its end of greater width than said flange *c'*, and having a like outer abutting face, the said faces of said flanges abutting against each other, and said flange *c* embracing both sides of said flange *c'*, whereby said parts are connected together, substantially as and for the purposes set forth.

3. In a metal barrel or other similar vessel, a body consisting of two substantially circular hollow tubular parts *b b* each having an annular peripheral recess *d* near its end, one of said parts having a laterally extending annular flange *c'* at its end having an outer abutting face and of less projection than the depth of the recess *d* of such part, and the other of said parts having a like laterally extending annular flange *c* at its end of greater width than said flange *c'* and having a like outer abutting face, the said faces of said flanges abutting against each other, and said flange *c* embracing both sides of said flange *c'*, whereby said parts are connected together, and the joint between said parts is within their outer peripheries, substantially as and for the purposes set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

DAVID CAIRD.

Witnesses:

GEORGE C. BACON,
JAMES BOYDE MCCLURG.