

No. 679,146.

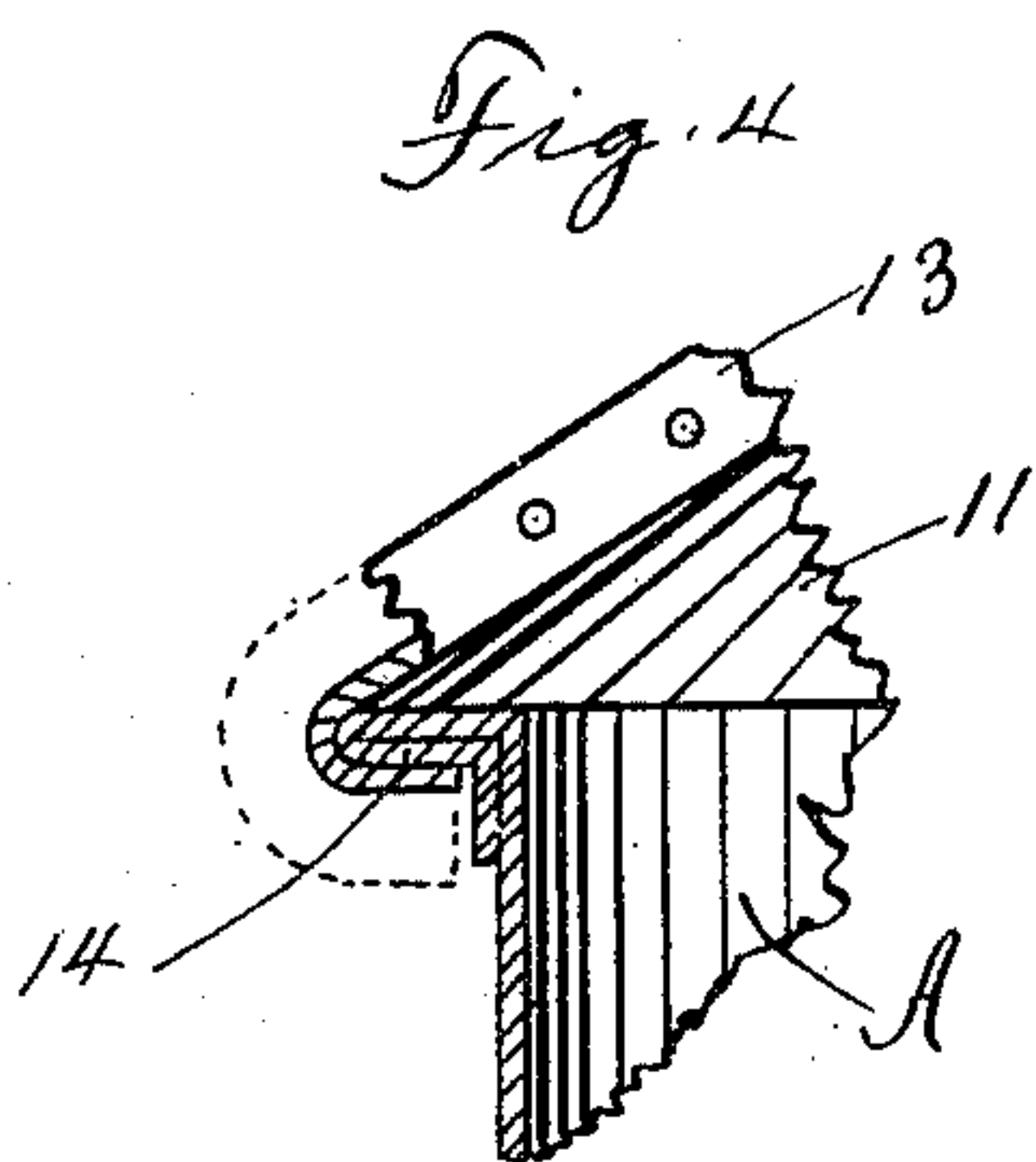
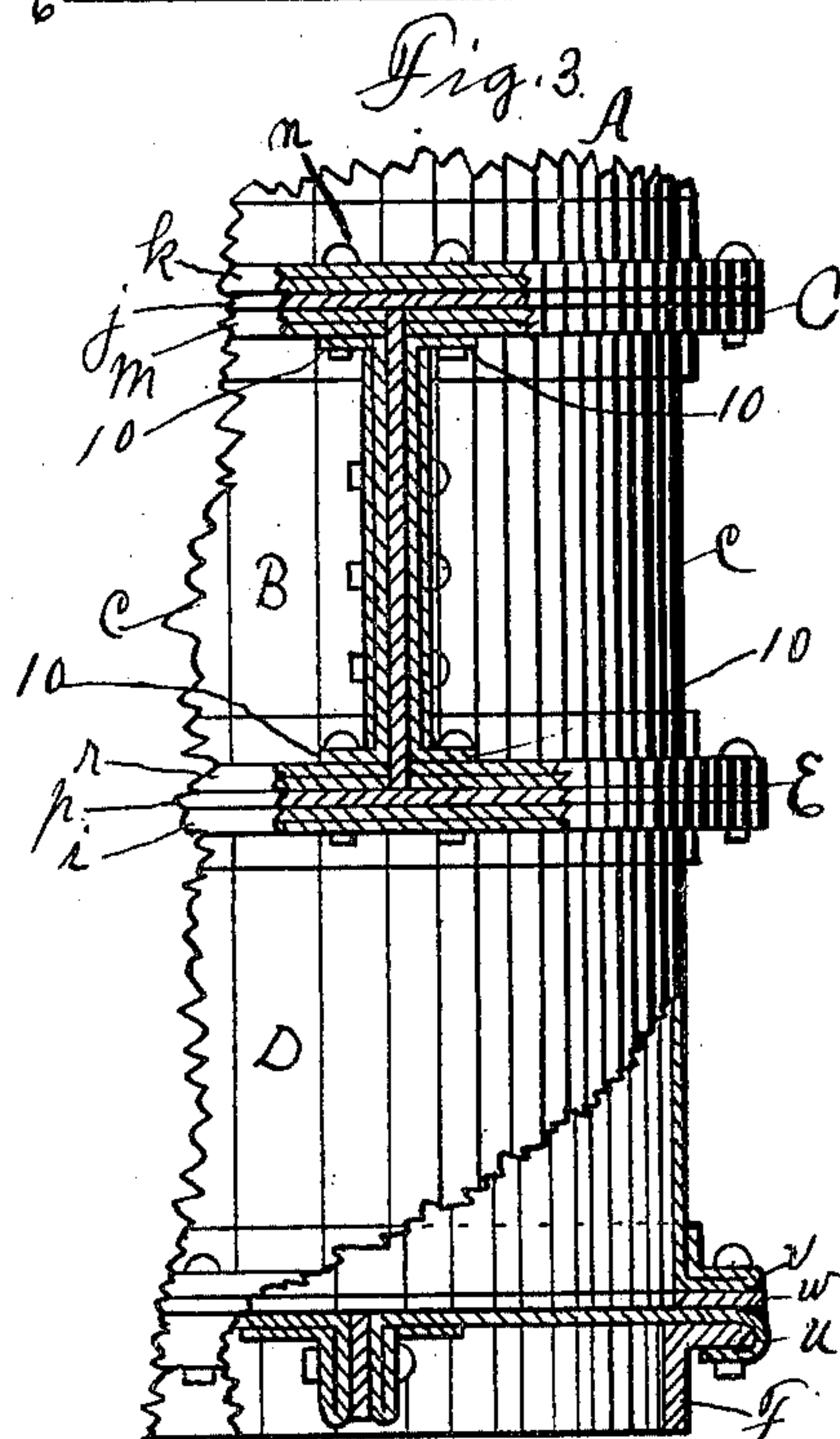
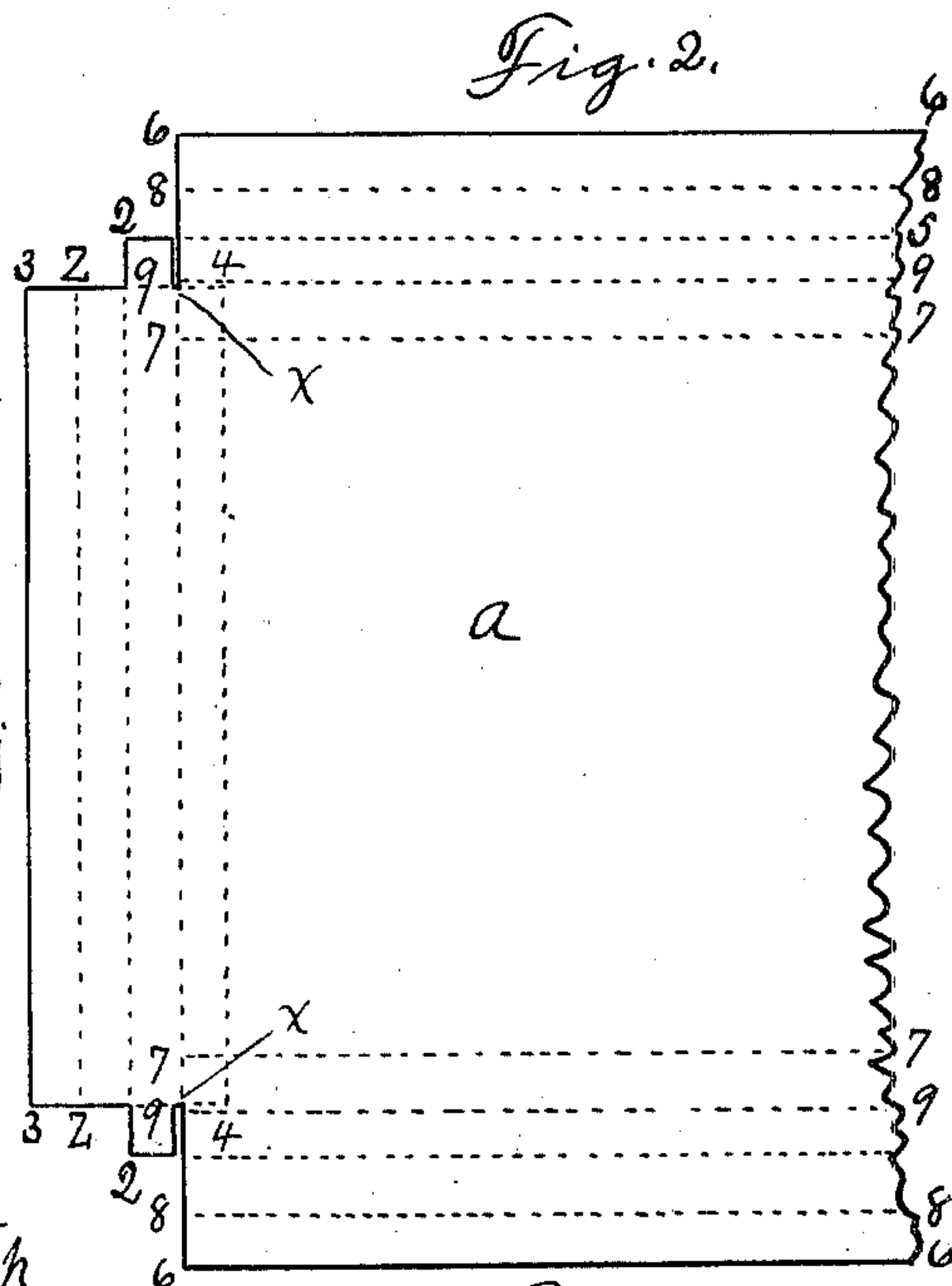
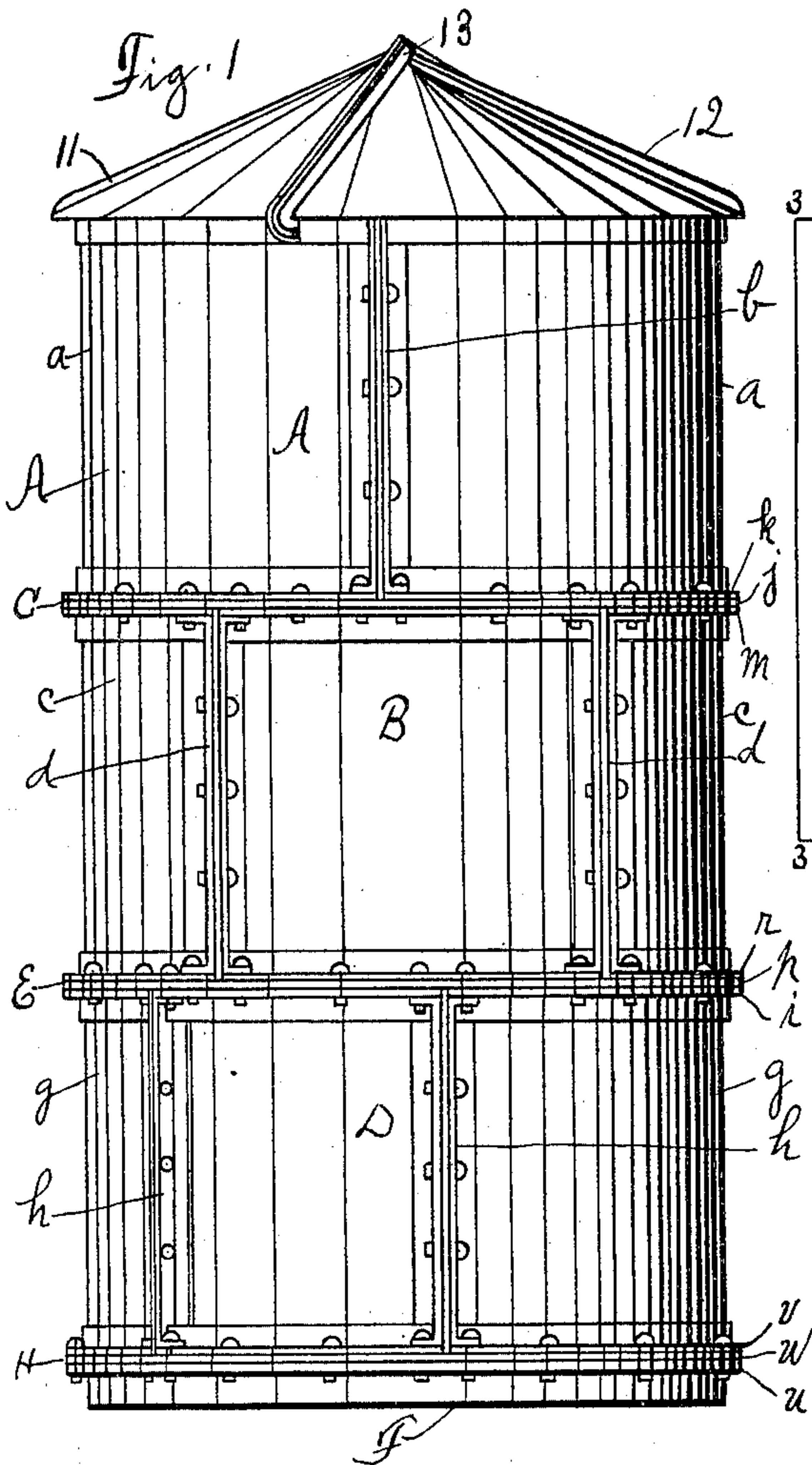
Patented July 23, 1901.

H. W. & T. C. HARRY.

KNOCKDOWN TANK.

(Application filed Apr. 3, 1900.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

HUGH W. HARRY AND THOMAS C. HARRY, OF DALLAS, TEXAS.

## KNOCKDOWN TANK.

SPECIFICATION forming part of Letters Patent No. 679,146, dated July 23, 1901.

Application filed April 3, 1900. Serial No. 11,350. (No model.)

*To all whom it may concern:*

Be it known that we, HUGH W. HARRY and THOMAS C. HARRY, citizens of the United States, residing at Dallas, Texas, have invented a new and Improved Knockdown Tank, of which the following is a specification.

This invention relates to sheet-metal tanks; and its object is to construct tanks which are strong and durable and which can be set up at places where the tanks are to be used. The tanks are made in sections and can be transported in sections. The advantages of such construction are that the cost of transportation will be less, the sections not requiring as much space as a complete tank would require, and the sections can be handled with greater facility. A very large tank might require several persons to move it from place to place or to put the same on a car. When made in sections, one man can move it with little effort.

Other objects and advantages will be fully understood from the following description and claims.

Reference is had to the accompanying drawings, which form a part of this application.

Figure 1 is a side elevation of a tank, showing the improved construction. Fig. 2 is a broken section, showing the manner of preparing all sections. Fig. 3 is a section of a tank and a vertical section of the vertical and horizontal seams or joints. Fig. 4 is a broken sectional view illustrating the manner of constructing the upper ends of the tanks and closing the same.

Similar characters of reference are used to indicate the same parts throughout the several views.

The tank consists of a plurality of sections united by horizontal seams, and each section may consist of a plurality of sections united by vertical seams; but our invention includes a tank consisting of one or more sections, and each section may consist of one or more sections united by vertical seams. The sections A and B are united by the seam C, and the sections B and D are united by the horizontal seam E. Section A may be composed of one or more sections *a*, united by vertical seams *b*. Section B may be composed of one or more

sections *c*, united by vertical seams *d*. Section D may be composed of one or more sections *g*, united by vertical seams *h*. Each seam is formed in a similar manner. A flange is formed on each edge. The two flanges are to be brought against suitable packing, which is placed between the flanges. The flanges are then pressed against and secured on the packing by bolts and nuts. Seam C is formed by packing *j*, flange *k* on section A, and flange *m* on section B, with bolts *n* and suitable nuts. Seam E is formed by the packing *p*, flange *r* on section B, and flange *i* on section D. The vertical seams are formed in a similar manner. The bottom end of the bottom section has a flange *v* formed thereon. A chime F has a flange *u* formed thereon. The bottom H is placed on the chime F, a packing *w* is placed on the bottom, and flange *v* is placed on the packing. The several parts are then bolted securely together. The chime F must be of much stronger metal than the metal composing the body of the tank to be substantial. The chime may be of angle-iron and the bottom may be attached to the horizontal flange *u*, as the top of the tank is attached to the body—that is, by crimping the edge of the bottom under the horizontal flange. The bottom is then attached to the body, as above stated.

Fig. 2 illustrates a part of a longitudinal section before the flanges are formed thereon. Each side of a longitudinal section is cut out, as shown by the left side in Fig. 2. To form the flanges, bend the piece along the line 2 2 until the line or edge 3 3 falls on the line 4 4 and press the folded part entirely flat. Then bend the piece along the line 2 5 until the line or edge 6 6 falls on the line 7 7 and press the folded part or lap flat, as before. The lines 8 8 will be along lines 9 9, and the line *z z* be along the line *x x*. Then bend the lap along the line *x x* until the bent portion stands at a right angle to the body of the section *a*. Then bend the ears 10 to the right until they form right angles with the lap. These ears will then be in line with the lines 9 9. Then fold the upper and lower laps until they form right angles to the body of section *a* and rest on the ears 10. This bending is accomplished with special machinery which will exert great power, so the creases or angles will be sharply



defined. It will be seen that each flange is formed of a double thickness of metal and will be very strong. Bolt-holes are made in the flanges, so that the flanges can be bolted to the adjacent flanges of adjoining sections. Fig. 3 shows a vertical section of a portion of the seam C and a portion of the vertical seam *d*. It will be seen that the flanges *k* and *m* are each composed of two thicknesses of metal and that the packing *j* is clamped between the flanges and that the ears 10 are bolted to the horizontal flanges. The seam *d* is formed in a similar manner to the seam C—that is, a packing and a flange of two thicknesses of metal on each side of the packing. One of the most important features of the flanges are to form braces for the tank. The horizontal seams, with the flanges, prevent any danger of bursting of the tank, and the vertical seams, with their flanges, make the tank stand firmly. It will be seen that the vertical seams of one section are not in alinement with the seams of the adjoining sections. The object of this arrangement is to distribute the bracing as thoroughly as possible.

The upper end of the tank is closed by means of a cap made in sections 11 and 12. Each section has a flange 13, by which the two sections may be bolted together. The upper section of the tank has flange 14, exactly similar to the flanges of the other sections. The lower edges of the cap-sections 11 and 12 are crimped to engage the flange 14, as shown in Fig. 4. It will be seen now that the cap-sections can be placed on the upper end of the tank and the sections shoved together and be bolted together, so that the cap cannot be taken off without taking out the bolts. The view of flange 14 in Fig. 4 may serve as a cross-sectional view of the flanges on the other sections, as the flanges *k* and *m*.

In large tanks the bottoms may be formed with sections united by seams similar to the seams already described. When thus constructed, the bottoms would be braced by the seams or the flanges forming the seams. It is thus shown that we have constructed a tank which can be transported in sections and set up at any desirable place by a person of ordinary intelligence. This will be especially useful when the tank is to be set up on high elevations, as on top of buildings and high platforms.

The sections of the tanks are made of uniform size, so that any section that may be injured or broken may be replaced by a new section without disturbing any other part of the tank. If at any time a larger tank is needed, (larger in diameter or of greater height,) new sections can be added. One of the great advantages in constructing tanks in this manner is that the tanks can be shipped in box-cars. Large tanks have to be shipped on flat-cars. The disadvantage in shipping on flat-cars is that often one tank will have to be shipped to a considerable dis-

tance and will require a whole car, thus making the freight too great to be profitable. With the sections of uniform size the sections can be nested and shipped in box-cars and the tank set up at its destination.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A knockdown tank composed of a bottom, a top, and a sectional cylindrical body, the sections forming said body being united by seams composed of flanges formed on the folded edges of the material forming said sections, packing between the flanges, and suitable bolts and nuts.

2. A knockdown tank comprising a sectional cylindrical body, a top and a bottom detachably secured to said body, and means for detachably securing together the sections forming said body consisting of flanges formed on the folded edges of the sections, packing placed between the flanges, and suitable bolts and nuts.

3. A knockdown tank composed of a cylindrical body, and a top and a bottom attached to said body, said body being composed of a plurality of cylindrical sections united by horizontal seams, each cylindrical section being composed of one or more longitudinal sections united by vertical seams, said seams being formed of strips of packing and flanges formed on the edges of said sections and suitable bolts and nuts for securing said flanges on said packing, said flanges being formed by folding the edges of the sections and bending the folded edges.

4. A knockdown tank having a cylindrical body, and a top and a bottom secured to said body, said body being composed of a plurality of cylindrical sections united by horizontal seams, said seams being formed of strips of packing and flanges formed on the folded edges of said sections and suitable bolts and nuts for clamping said flanges on said packing, said flanges being adapted to form annular braces for said tank.

5. A knockdown tank having a cylindrical body and a top and a bottom secured to said body, said body being composed of a plurality of cylindrical sections united by horizontal seams each cylindrical section being composed of a plurality of longitudinal sections united by vertical seams, said seams being composed of flanges formed on the folded edges of said sections and strips of packing between the flange of each section and the adjacent section and suitable bolts and nuts for securing said flanges on the packing, said horizontal seams being adapted to form annular braces and said vertical seams being adapted to form braces for the tank by bracing the horizontal seams.

6. A knockdown tank composed of a sectional body and a bottom, the sections forming said tank being united by seams composed of flanges formed on the folded edges



of the material forming said sections, packing between the flanges, and means for securing the flanges on the packing.

7. A knockdown tank having a cylindrical body, and a top and a bottom secured to said body, the upper part of said body having the edge folded and a flange formed thereon, said top or cap being composed of two sections, the adjacent edge of each section having a flange formed thereon and the bottom edges of said sections being crimped to engage the flange of said body, and having suitable bolts and nuts for securing the flanges of the sections together.

8. A knockdown tank having a cylindrical body, and a top and a bottom secured to said body, said body being composed of a plurality of cylindrical sections united by horizontal seams, each cylindrical section being composed of one or more longitudinal sections united by vertical seams, said vertical seams having ears by which the vertical seams are attached to the horizontal seams, said horizontal seams being adapted to form braces for said tank, the vertical seams of each cylindrical section being arranged out of alignment with the seams of the adjacent sections whereby said vertical seams are adapted to form braces distributed to various parts of said tank.

9. A knockdown tank composed of a detachable bottom and a detachable top, a cylindrical body in one or more sections, the edges of the section or sections forming said body being lapped upon themselves and flanges formed on the lapped edges, and the seams for uniting the edges of said section or sections consisting of said flanges, packing

between said flanges, and suitable bolts for securing said flanges on said packing.

10. A knockdown tank composed of a top and a detachable bottom and a sectional cylindrical body, the sections forming said body having the edges thereof lapped upon themselves and being united by seams composed of flanges formed on said lapped edges, packing between the flanges, and suitable bolts and nuts for securing said flanges on said packing.

11. A knockdown tank composed of a top, a detachable bottom, and a cylindrical body composed of sections, said sections being united by seams composed of flanges formed on the adjacent sections, packing between said flanges, and suitable bolts and nuts, said flanges being formed by folding the edges of said sections and then bending the folded edges.

12. A metallic tank composed of a top, a detachable bottom, and a cylindrical body composed of sections, said sections being united by seams composed of flanges formed on the adjacent sections, packing between the flanges, and suitable bolts and nuts, said flanges being formed by folding the edges of the metal composing said sections and bending the folded edges whereby said seams constitute braces for strengthening the tank.

In testimony whereof we set our hands, in the presence of two witnesses, this 12th day of February, 1900.

HUGH W. HARRY.  
THOMAS C. HARRY.

Witnesses:

A. L. JACKSON,  
A. H. ESTES.