

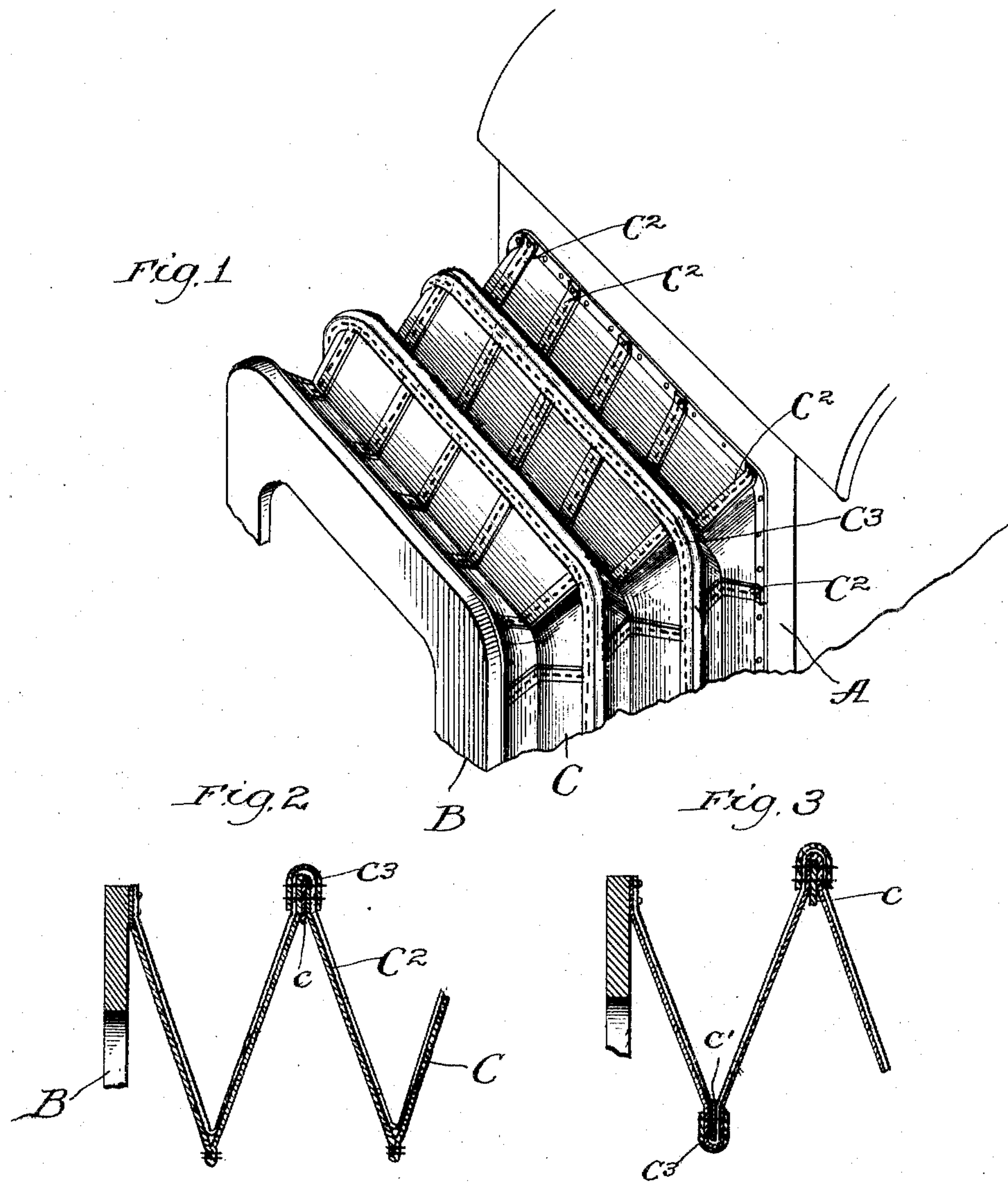
No. 777,234.

PATENTED DEC. 13, 1904.

G. S. WOOD.
CAR DIAPHRAGM.
APPLICATION FILED JUNE 30, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
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2 SHEETS—SHEET 2.

Fig. 4.

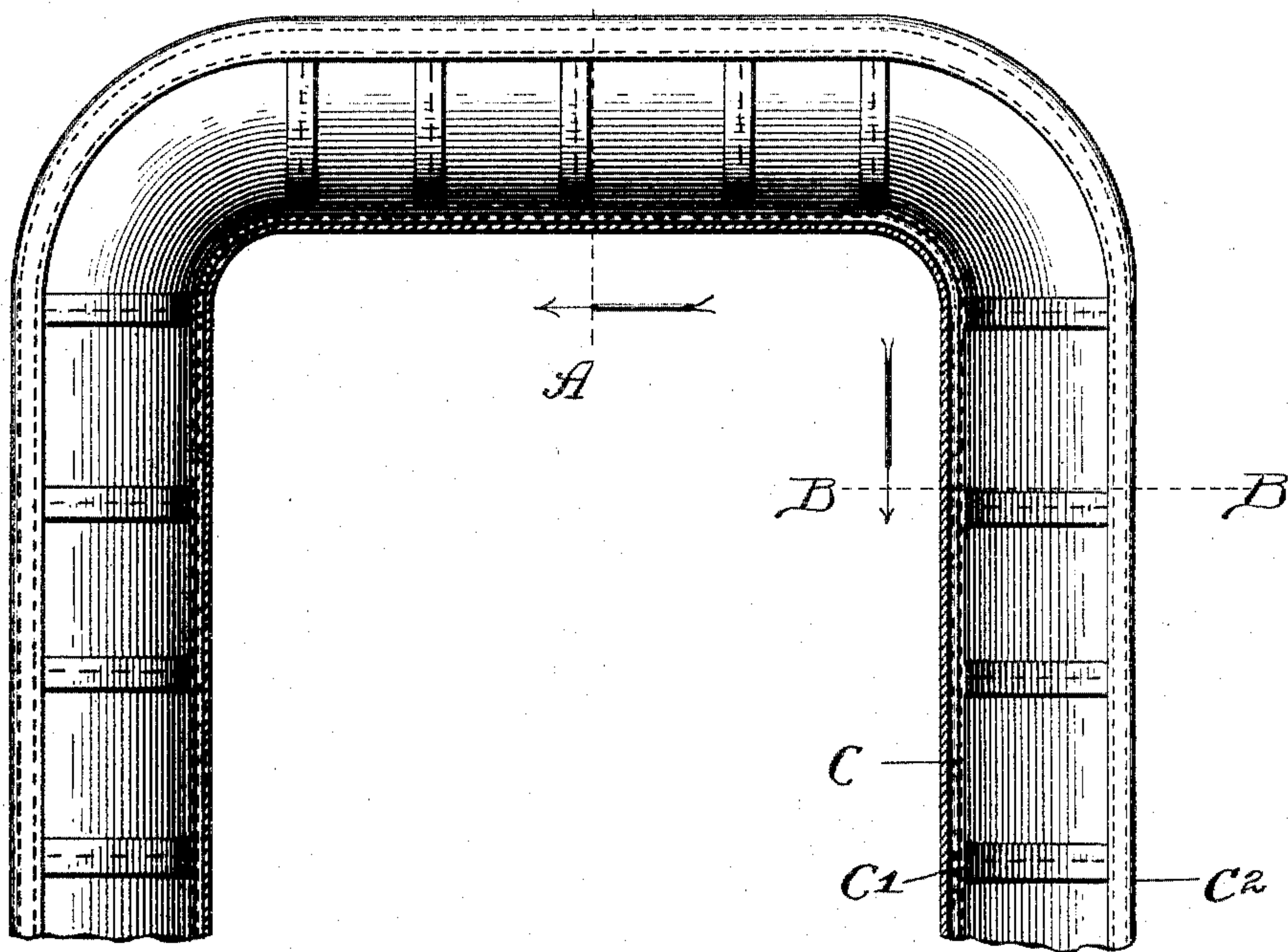


Fig. 5.

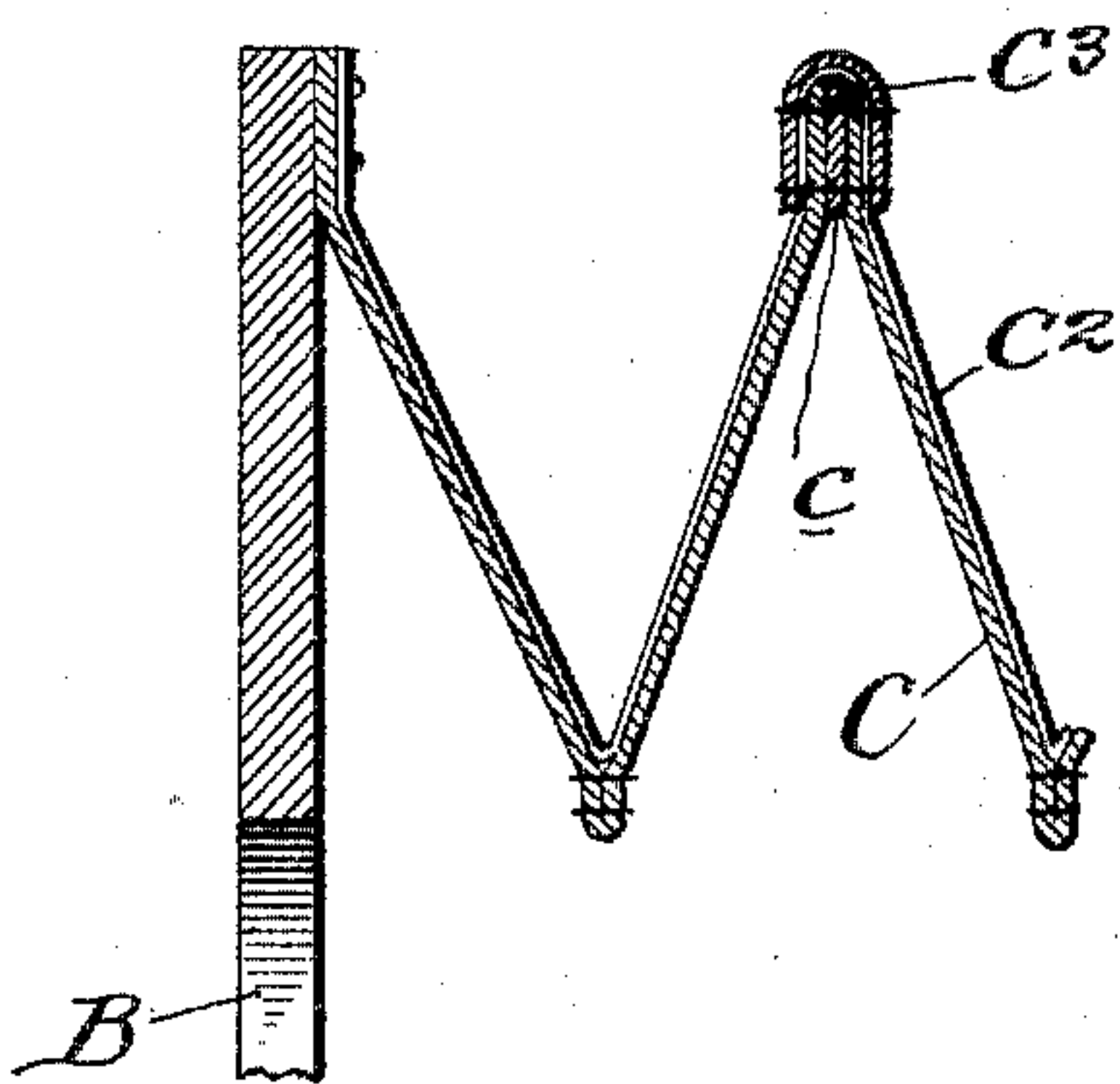
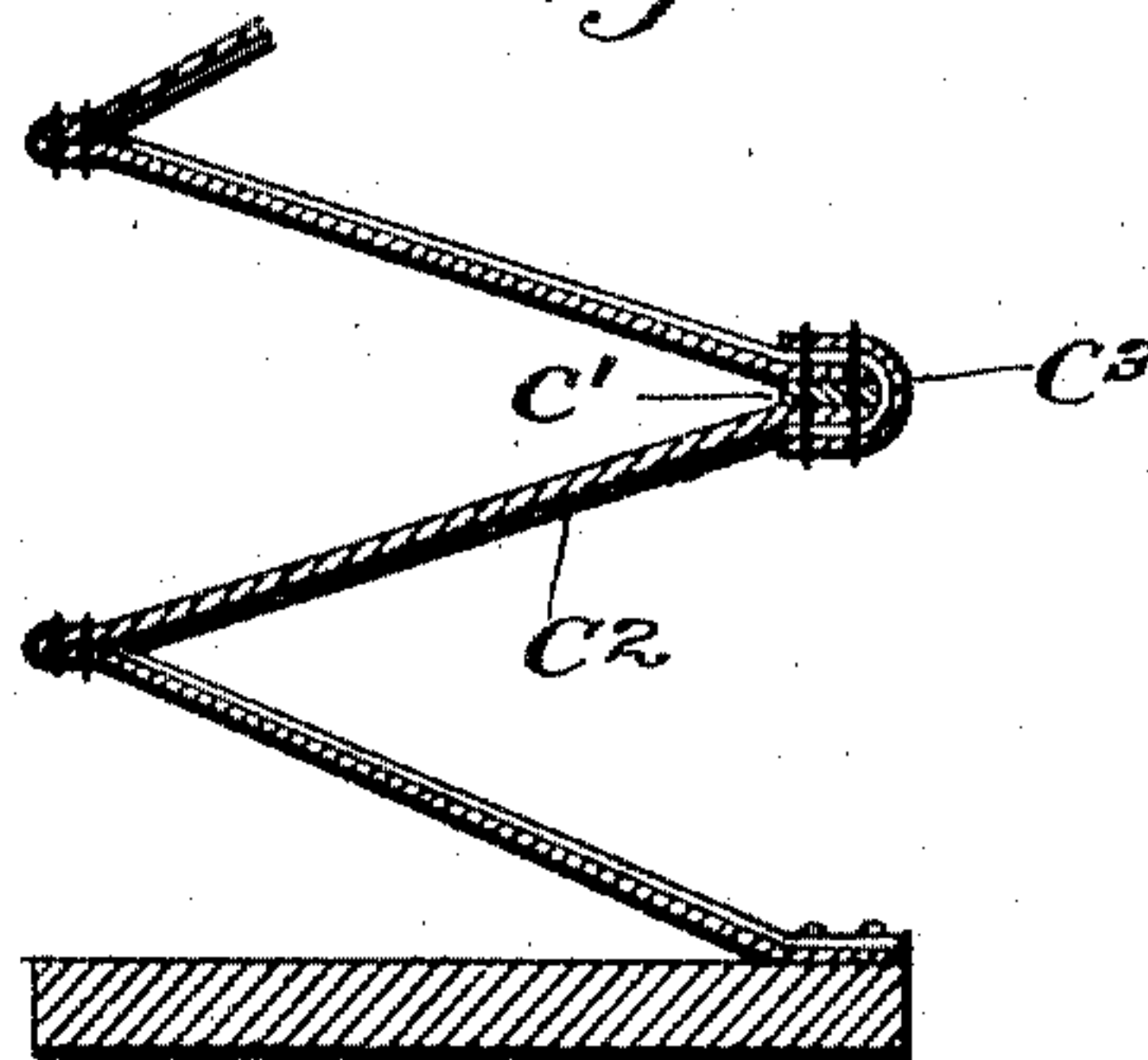


Fig. 6.



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UNITED STATES PATENT OFFICE.

GUILFORD S. WOOD, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO ACME SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CAR-DIAPHRAGM.

SPECIFICATION forming part of Letters Patent No. 777,234, dated December 13, 1904.

Application filed June 30, 1902. Serial No. 113,763. (No model.)

To all whom it may concern:

Be it known that I, GUILFORD S. WOOD, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Diaphragms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in car-diaphragms, and more particularly to a diaphragm designed to be constructed of fabric and stiffened to provide sufficient rigidity to withstand the hard usage such structures are subjected to.

The invention provides a cheap and simple construction of great strength and durability and of light weight.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a fragmentary perspective view of a car end and diaphragm embodying my invention. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a similar section showing a slightly-modified construction. Fig. 4 is a vertical section taken through the top and legs. Fig. 5 is a section taken through the top transversely of the folds. Fig. 6 is a section taken transversely of a leg.

As shown in said drawings, A and B indicate, respectively, the vestibule face-plate and the diaphragm face-plate of the usual form and between which is secured the diaphragm (indicated as a whole by C) and which is attached to each in the usual or any desired manner. As shown, said diaphragm comprises one or more strips of fabric folded to provide accordion-plaits and sewed at the outer bends or angles thereof. Secured in each of the outer bends or angles, as shown in Fig. 2, is a relatively narrow strip *c* of rigid material, which may be metal, wood, papier-mâché, leather, or any material affording sufficient rigidity. Said strip *c*, as shown, extends across

the top of the diaphragm and, if preferred, may also extend down the legs of the diaphragm in each of the outwardly-directed seams and may be secured in position by sewing the fabric and strip through and through, as shown in Figs. 2 and 5. As shown in Figs. 4, 5, and 6, the folds at the top of the diaphragm are wider than those forming the diaphragm-legs, and the bends or folds are rigidly secured together by stitching the same in a plurality of lines or seams for an inch or more of the width. This provides a rigid strip at the angle or bend, which serves to support the top of the diaphragm. Obviously, if preferred, a plurality of relatively narrow strips of fabric may be used, which may be sewed together, forming a seam at the meeting edges, as shown in Fig. 2, which may be made rigid, as before described, and, if preferred, the strengthening-strips *c'* may be secured in the inner folds of the diaphragm as well as in the outer, as indicated in Fig. 3.

Stays *c''*, of leather or other suitable material, are permanently stitched on the fabric comprising the diaphragm, transversely thereof, and are secured at their ends to the face-plates and afford an additional means for supporting the diaphragm from sagging. Narrow strips *c'''*, of leather or other suitable material, are applied over and cover the seams and act to protect the edges from moisture or dirt.

The operation is as follows: The strengthening-strip *c*, together with the binding *c''* and strips *c'''*, serves as a support for the top of the diaphragm. The additional width of the fold at the top of the diaphragm and the lines of stitching thereon greatly strengthen the top and permit the diaphragm to be made of much lighter material than has heretofore been thought possible.

Obviously many details of construction may be varied without departing from the principles of this invention.

I claim as my invention—

1. The combination with a diaphragm of the class described having the edges of its folds secured together face to face, of a narrow stiffening-plate secured between said edges,

and stiffening members secured transversely of said folds.

2. A diaphragm of the class described comprising an accordion-plaited fabric, and a stiffening-strip secured at the bend or folds and a plurality of transverse bands acting to support the top of the diaphragm.

3. A diaphragm of the class described comprising a relatively light fabric folded to provide accordion-plaits and having the bends or angles permanently stitched together in a plurality of seams, a rigid plate engaged between the walls of the angles or bends adapted to stiffen the diaphragm and transverse stiffening members rigidly secured on said folds.

4. In a car-diaphragm of the class described the combination with a plurality of strips of fabric folded longitudinally and joined at their outer edges with the adjacent fold of like strips, of a plate secured between said edges and a binding of leather or the like covering and stitched to the edges of said strips.

5. A diaphragm of the class described comprising a plurality of strips of fabric folded longitudinally and having the edges thereof secured on the edges of adjacent strips, a relatively thin strip of rigid material secured between said edges, a leather binding cover-

ing said edges and sewed through and through the edges and said strips and bands extending transversely of the diaphragm and sewed thereto.

6. A diaphragm of the class described having the top thereof wider than the legs and a plurality of parallel lines of stitching extending through adjacent folds and across the top and forming a relatively broad rigid welt or seam and stays extending transversely thereof adapted to stiffen the diaphragm.

7. A car-diaphragm comprising an accordion-folded fabric the folds at the top being wider than those of the legs, a covering of leather or the like over each of the outwardly-turned angles and stitched thereto and strips of leather extending transversely of the top and legs of the diaphragm and a plurality of lines of stitching at the top of each fold of the diaphragm-top acting to stiffen the top.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

GUILFORD S. WOOD.

Witnesses:

C. W. HILLS,
A. C. ODELL.