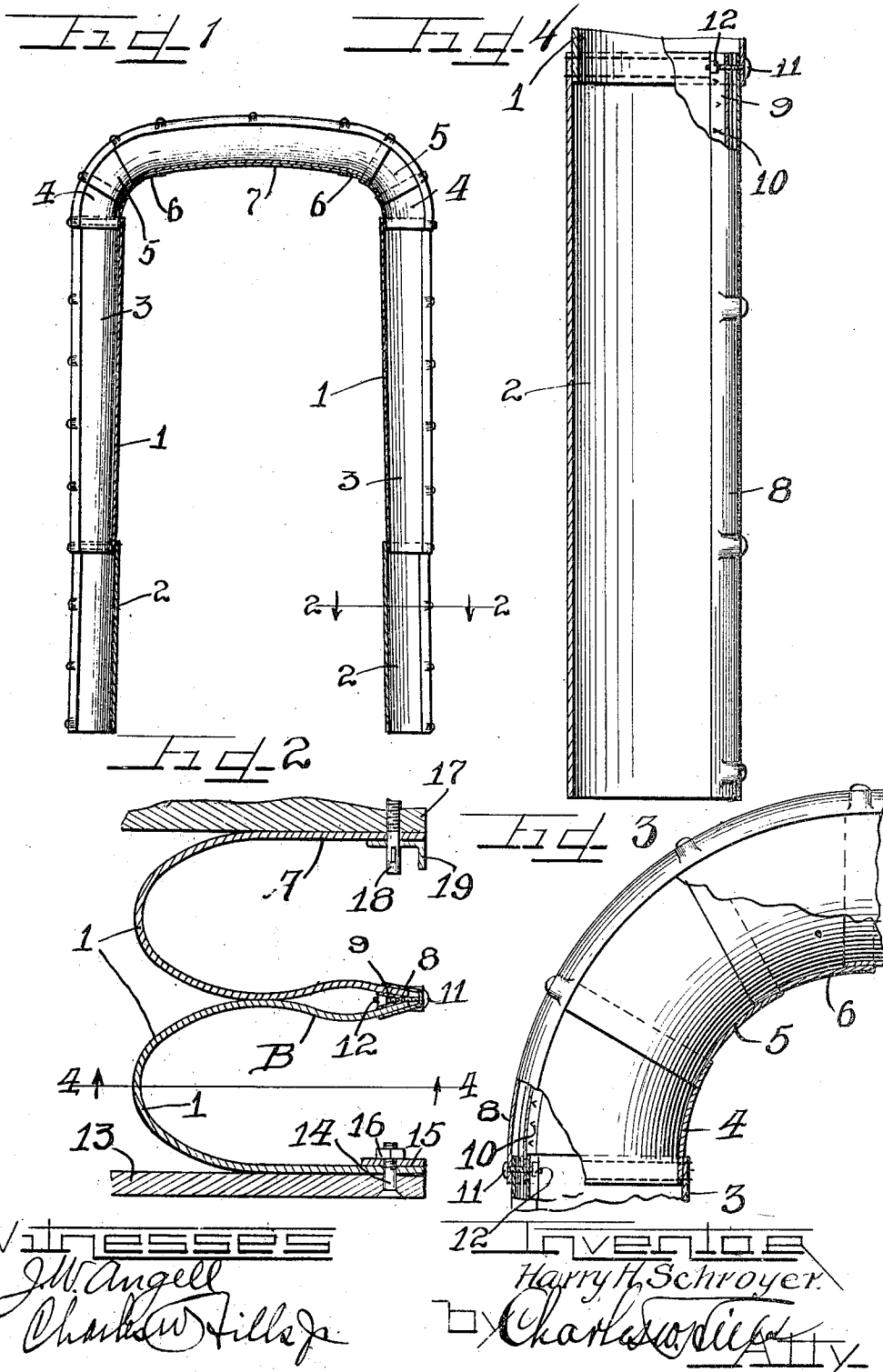


H. H. SCHROYER.
SECTIONAL VESTIBULE DIAPHRAGM.
APPLICATION FILED APR. 8, 1912.

1,060,639.

Patented May 6, 1913.



UNITED STATES PATENT OFFICE.

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SECTIONAL VESTIBULE-DIAPHRAGM.

1,060,639.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY H. SCHROYER, 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 Sectional Vestibule-Diaphragms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numbers of reference marked thereon, which form a part of this specification.

Diaphragms for railway car vestibules are subjected to very severe usage. Usually such diaphragms first fail or become torn or frayed near the lower ends of the legs of the diaphragm. They also become rotted in the inwardly directed V shaped seams or angles which act to hold moisture and dirt or even sparks, with an effect destructive to the life of the diaphragm. Any portion of the diaphragm may, of course, fail because of bad usage or accident, and as heretofore constructed, in such instances it has been usual to discard the entire diaphragm and to replace the same with new, inasmuch as the difficulty of repair has heretofore rendered expense of repair practically prohibitive. This entails a large loss upon the owners of cars equipped with such diaphragms.

It is the object of this invention to so construct car vestibule diaphragms as to enable any part thereof to be quickly and economically repaired or replaced without the necessity of detaching from the vestibule as a whole, or any part thereof, except the immediate portion to be repaired, from the face plates.

It is also an object of the invention to so construct a diaphragm as to afford relatively short transverse sections as well as vertical sections, and to so connect and unite the same as to permit any of said sections to be removed from, and replaced in the diaphragm without disturbing any of the remaining sections.

It is an object also of the invention to afford a construction whereby the vertical sections of the diaphragm may be centrally and detachably united to permit ready repair and renewal.

The invention (in a preferred form) is illustrated in the drawings, and hereinafter more fully described.

In the drawings: Figure 1 is a vertical section taken through the diaphragm. Fig. 2 is an enlarged, transverse section on line 2—2 of Fig. 1. Fig. 3 is an enlarged fragmentary detail and section of one of the shoulders of the diaphragm. Fig. 4 is a slightly reduced section taken on line 4—4 of Fig. 2, and broken away to illustrate the attaching means.

As shown in the drawings: Relatively short strips of fabric of suitable width are bent transversely to afford the U-shaped folds 1, and these are arranged in overlapped relation, the lower end of the upper within the upper end of the lower section, as shown in Fig. 1, to afford one of the U- or trough-shaped sections of the diaphragm, and said sections are stitched, stapled or otherwise secured together at their overlapping ends to firmly engage the same together. Each of said vertical sections may be constructed of as many transverse sections as preferred. As shown, however, the lower section 2, of each of said vertical sections will be relatively short, and will receive therein the upper and longer leg section 3, which in turn receives the short segment shaped shoulder or corner sections 4, 5, and 6, the one within the other, and the latter the top section 7, thus affording a continuous trough, U-shaped in cross section around the top and legs of the diaphragm. Two of said vertical sections ordinarily are used in constructing the diaphragm, though, of course, this may vary with the width of the strips affording the diaphragm sections. Said vertical sections are arranged side by side between the face plates, as shown in Fig. 2, and indicated respectively by A and B, and with the edges turned outwardly. The inner edges of each of said sections may be stitched, stapled or otherwise secured together, as preferred. As shown, said edges are detachably engaged together by means of metallic clamps, each as long as the section to which it is engaged and comprising an outer substantially V-shaped angle bar 8, which fits over said edges of said vertical sections, inner V-shaped sections 9, which fit between said edges and are stamped to afford outwardly turned barbs 10, to engage in the inner side of the fabric, and bolts 11, which engage in the nuts 12, in said inner angle bar or strip and act to firmly draw and jam all into positive en-

gagement with said edges of the sections. As shown in Figs. 3 and 4, the clamping members for each upper section of the diaphragm, overlap the upper ends of the clamping members for the next lower section and one of said bolts 11, extends through said overlapped ends and serves to engage the adjacent ends of the similar clamping members for adjacent sections together.

The outer edge of the outer vertical section of the diaphragm is engaged on the vestibule face plate 13, by means of bolts 14, which engage therethrough and through said edge of the diaphragm and also through apertures in the metallic straps 15, so that by removing the nuts 16, from said bolts, said metallic straps 15 (which also may be arranged in short sections corresponding with the length of the transverse section of the diaphragm) may be removed.

The inner edge of the inner vertical section of the diaphragm is fastened on the vestibule face plate 17, by means of screw studs 18, set in said face plate and each provided with an aperture in its outer end to receive a cotter pin or key. The outer ends of said studs extend through suitable apertures near the edge of the diaphragm and through apertures in the bars 19. Said channel bars may be constructed as set forth in my prior Patent No. 768,775, issued to me on the 30th day of August, 1904, or may be constructed in sections corresponding in length with one or more of the transverse diaphragm sections, if preferred. Preferably, the outer and inner clamping members 8 and 9, at the top of the diaphragm extend continuously over the top and shoulders of the diaphragm each in one piece, and are united by means of the bolt 11, as before described, with the upper ends of the clamping members for the upper transverse leg section.

The operation is as follows: Should it be desired to remove or renew any transverse section of the diaphragm for any reason, it may be accomplished by releasing the clamping members and unstitching the section to be removed from the ends of the adjacent sections, whereupon said section may be taken cut intact and without disturbing any of the other sections. The repaired section or a new section, is then returned to place and stitched, stapled or otherwise secured as before described, to the ends of the adjacent sections, the clamping members restored to place, the retaining straps for fastening the section to the face plate are again secured, and the diaphragm is again complete.

Of course, while I have shown a diaphragm comprising U-shaped sections, it is to be understood that diaphragms constructed in accordion plaits as heretofore,

may be constructed in transverse sections to permit of repair as before described, in which instance, of course, the inner edges of each fold, as well as the outer edges thereof, may be engaged by the clamping members such as described, to permit of ready detachment and repair, and the individual sections (more particularly at the bottom of the legs, where damage most frequently occurs) are made sufficiently short to obviate the necessity of any considerable waste of material in repairs.

Details of construction and arrangement may, of course, be varied. I have shown but a preferred construction and therefore do not purpose limiting myself in the patent to be granted on this application, otherwise than necessitated by the prior art.

I claim as my invention:

1. In a device of the class described outwardly directed U-shaped diaphragms, a plurality of detachable sections comprising each of said diaphragms, and releasable clamps engaging the diaphragms one to the other at the edges thereof.

2. In a railway diaphragm the diaphragm legs comprising strips of fabric arranged side by side, and clamps engaging corresponding edges of said strips together and embracing an inner clamping member arranged between said edges, an outer clamping member to engage over said edges, and bolts extending between said edges and engaging the clamping members and acting to draw the same into gripping engagement with said edges.

3. A diaphragm comprising relatively short strips of fabric arranged to form the diaphragm legs, and secured together with adjacent ends overlapping, and metallic clamps releasably engaging the corresponding edges of said short diaphragm sections and serving to stiffen the same.

4. A sectional diaphragm embracing vertical sections of fabric, each comprising a plurality of relatively short pieces arranged with the lower end of each upper section overlapping the adjacent end of a lower section and detachably engaged thereto, said sectional diaphragms arranged with outer ends releasably attached to the respective face plates, clamping and stiffening means embracing an inner clamping member engaged between adjacent edges of said sections, an outer member inclosing said edges and said inner clamping means, and bolts engaged through both and acting to draw the same together.

5. A sectional diaphragm embracing vertical sections of fabric, each comprising a plurality of relatively short pieces arranged with the lower end of each upper section overlapping the adjacent end of a lower section and detachably engaged thereto, said diaphragm having the outer edges releas-

ably attached to the respective face plates, clamping and stiffening means embracing an inner clamping member engaged between adjacent edges of said sections, an outer member inclosing said edges and said inner clamping means, bolts engaged through said outer and inner members and acting to draw the same together, and releasable clamps engaging the adjacent and corresponding edges of said vertical sections together.

6. A diaphragm embracing a plurality of vertical sections of fabric bent to afford U-shaped, outwardly opening troughs around the top and at the legs of the diaphragm, each of said vertical sections comprising short lower leg sections, longer upper leg sections, shoulder sections and top sections of fabric, all united together so that the lower end of one section overlaps the upper end of the adjacent lower section, and clamps releasably engaging the corresponding and adjacent edges of said vertical sections together to permit removal and replacement of any portion of the diaphragm.

7. A diaphragm of the class described embracing vertical diaphragm sections or units arranged side by side and releasably united at their outwardly directed edges, the legs of said diaphragms near their bottoms being constructed to afford relatively short removable sections.

8. In a diaphragm comprising vertical units comprising the legs, shoulders and top of the diaphragm, and each constructed of a plurality of short pieces detachably engaged to form said unit, of means for engaging the adjacent edges of said units releasably together, comprising an inner clamping member for engagement between said edges, an outer clamping member to receive said edges

with the clamping means therebetween, and bolts for engaging the clamping means in place, said clamping means being constructed in sections with the lower end of each upper section overlapping the upper end of a lower section at a joint in the said unit, and rigidly engaged together by one of the clamping bolts extending through said ends.

9. In a diaphragm of the class described the combination with the vestibule and diaphragm face plates, of a diaphragm of fabric engaged therebetween, sectional means for engaging the outer edges of the diaphragm on said face plate, and sectional clamping means acting to rigidly secure the adjacent edges of the diaphragm releasably together.

10. In a diaphragm a clamp for engaging adjacent edges of the fabric to afford the plait, embracing an inner angle strip for engagement between said edges, an outer acute angle strip to receive said edges and the inner angle strip therein, bolts extending through the angles of said strips and between the edges of the fabric, nuts thereon in the inner angle strip.

11. In a diaphragm of the class described the diaphragm leg embracing the upper portion of the leg and a short removable section affording the lower end of the leg, the upper end thereof overlapped by the lower end of the upper portion of the leg.

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

HARRY H. SCHROYER.

Witnesses:

LAWRENCE REIBSTEIN,
GEORGE R. MOORE.