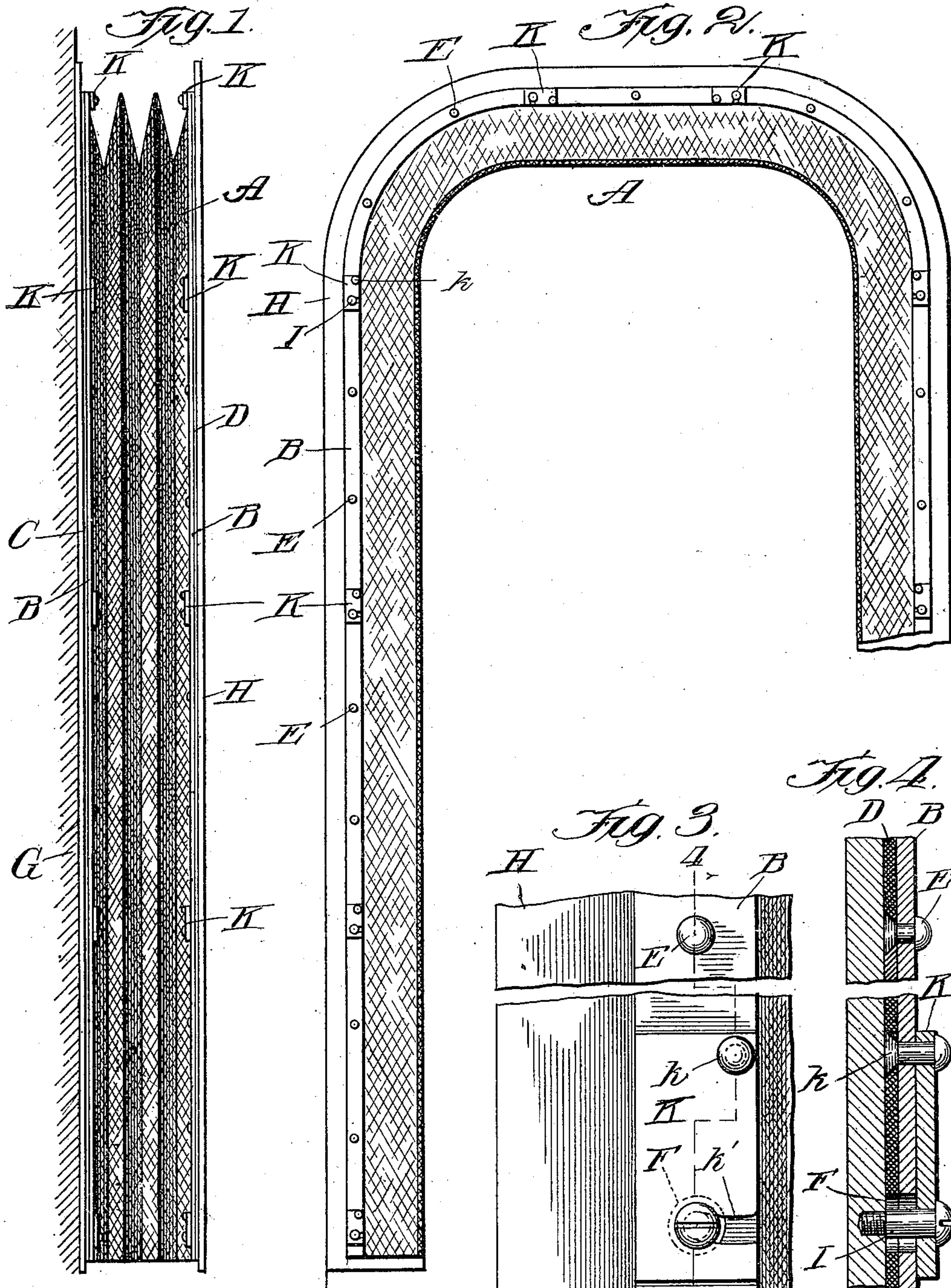


J. H. DONALDSON.  
 MEANS FOR ATTACHING VESTIBULE DIAPHRAGMS.  
 APPLICATION FILED FEB. 1, 1909.

975,219.

Patented Nov. 8, 1910.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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MEANS FOR ATTACHING VESTIBULE-DIAPHRAGMS.

975,219.

Specification of Letters Patent.

Patented Nov. 8, 1910.

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*To all whom it may concern:*

Be it known that I, JAMES H. DONALDSON, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Means for Attaching Vestibule-Diaphragms, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

It has long been customary to secure one end of a car-vestibule diaphragm to the car and the other end to a face plate by means of a large number of screws or the like arranged rather closely together around the diaphragm. When it is desired to remove a face plate or remove a diaphragm considerable time and labor must be spent in removing the numerous screws. The workmen often remedy this by taking a crowbar and prying the face plate or the diaphragm, disfiguring the car and tearing the diaphragm.

The object of the present invention is to provide a simple and novel arrangement whereby a diaphragm may be attached or detached from a car or a face plate quickly and conveniently and without danger of injuring or marring either the car or the diaphragm.

The various features of novelty whereby my invention is characterized will hereinafter be described with particularity in the claims; but, for a full understanding of my invention and of its object and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawing, wherein:

Figure 1 is a side view of a diaphragm attached to a car and to a face plate in accordance with a preferred form of my invention; Fig. 2 is a section taken at right angles to Fig. 1; Fig. 3 shows a fragment on a larger scale; and Fig. 4 is a section on line 4—4 of Fig. 3.

In accordance with my invention, I provide at each face of the diaphragm a strong stiff section which will hold the diaphragm firmly in place when a few fastening devices are inserted therethrough. I prefer to confine the stiffening of the faces to narrow

bands at the edges thereof in order that the major portions of the face member may form part of the distensible body of the diaphragm. One of the simplest methods of stiffening the edges is to bend flat bars of iron or other metal into a large U which may then be riveted or otherwise secured to the faces of the diaphragm adjacent to the outer edges thereof. The diaphragm is then secured to the car and to the face plate by means of simple quickly-detachable fastening devices.

Referring to the drawing wherein I have illustrated a preferred arrangement, A represents a vestibule diaphragm of any usual type. B, B are a pair of U-shaped strips of iron or other metal secured to the backs of the end or face members C and D of the diaphragm by rivets E or otherwise. A few openings F, (ten or twelve, for example,) passing through the strips and the adjacent fabric of the diaphragm, serve to receive fastening devices firmly secured to the car G and to the face plate H. These fastening devices may conveniently take the form of studs or screws I having heads of a size small enough to permit them to pass through the openings. Upon each of the strips, adjacent to each of the openings F, is a dog or catch K which may be swung beneath the head of a screw or stud projecting through the opening. The distance from the head of each of the screws or studs to the body or wall from which it projects is equal to the combined thicknesses of one of the dogs, the strip and the adjacent fabric of the diaphragm whereby, when the dogs are dropped behind the whole series of screw heads projecting through one of the strips, the one end of the diaphragm is firmly clamped in place. To release the diaphragm at either end it is only necessary to swing back the dogs. Thus, by a few simple manipulations, the face plate may be detached from the diaphragm, the diaphragm may be released from the car, or the diaphragm may be released both from the car and from the face plate.

The dogs may take any desired form. Thus they may consist of pieces of metal of the same width as the strips, be pivoted thereto as at K, and have arc-shaped slots of a width sufficient to let the stems but not the heads of the screws or studs to pass



therethrough. The pivots are preferably placed near one corner so that the weight of the dogs tends to keep them in locking positions.

5 While I have described in detail only a preferred form of my invention it will of course be understood that many changes may be made in the structural details without departing from my invention, and I do  
10 not desire to be limited except as indicated by the terms of the definitions of my invention constituting the appended claims.

Having now fully described my invention what I claim as new and desire to secure by  
15 Letters Patent is:

1. In combination, a car-vestibule diaphragm having one of its end faces stiffened along the outer edge thereof, an engaging member, and separated clamping  
20 devices distributed along said stiffened portion and in direct engagement therewith for clamping said stiffened portion to the said engaging member.

2. In combination, a car-vestibule diaphragm having a stiffened portion extending around one of the end faces thereof, an engaging member, and clamps for holding  
25 said member to said diaphragm, one part of each clamp being carried by the said member and the other part by said stiffened portion.

3. In combination, a car-vestibule diaphragm having a stiffened portion extending around one end face thereof, an engaging member, a series of shouldered studs extending from said engaging member, and a  
35 series of dogs on said stiffened portion for engaging with said studs.

4. In combination, a car-vestibule diaphragm, a continuous metal strip extending along one leg and across a portion at least of the top of one end member of the diaphragm, means for rigidly uniting said  
40 strip to said end member, an engaging mem-

ber, and means for detachably clamping 45 said strip to said engaging member.

5. In combination, a car-vestibule diaphragm, a continuous metal strip extending along both legs and across the top of one of the end members of said diaphragm, 50 an engaging member, and means for detachably clamping said strip to said engaging member.

6. In combination, a car-vestibule diaphragm having a stiffened portion extending around one end face thereof, an engaging member, said stiffened portion having a series of holes therethrough, a series of studs on said engaging member projecting  
60 through said holes, and dogs for locking the studs in said holes to clamp said engaging member to the diaphragm.

7. In combination, a car-vestibule diaphragm, having a stiffened portion extending around one end face thereof, an engaging member, said stiffened portion having a series of holes therethrough, a series of studs on said engaging member projecting  
65 through said holes, and a series of dogs on said stiffened portion cooperating with said studs to clamp the said engaging member detachably against the diaphragm.

8. In combination, a car-vestibule diaphragm, having a metal strip extending around and secured to one end member thereof, an engaging member, a series of holes in said strip, a series of headed studs on said engaging member projecting through said  
75 holes, and a series of dogs on said strips arranged to be moved into and out of position between the strip and the heads of said studs.

In testimony whereof, I sign this specification in the presence of two witnesses.

JAMES H. DONALDSON.

Witnesses:

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HARRY S. GAITHER.