Feb. 4, 1947. A. A. RITTER 2,415,220

SEALING MEANS FOR LUGGAGE CASE SECTIONS

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Fig. 1.

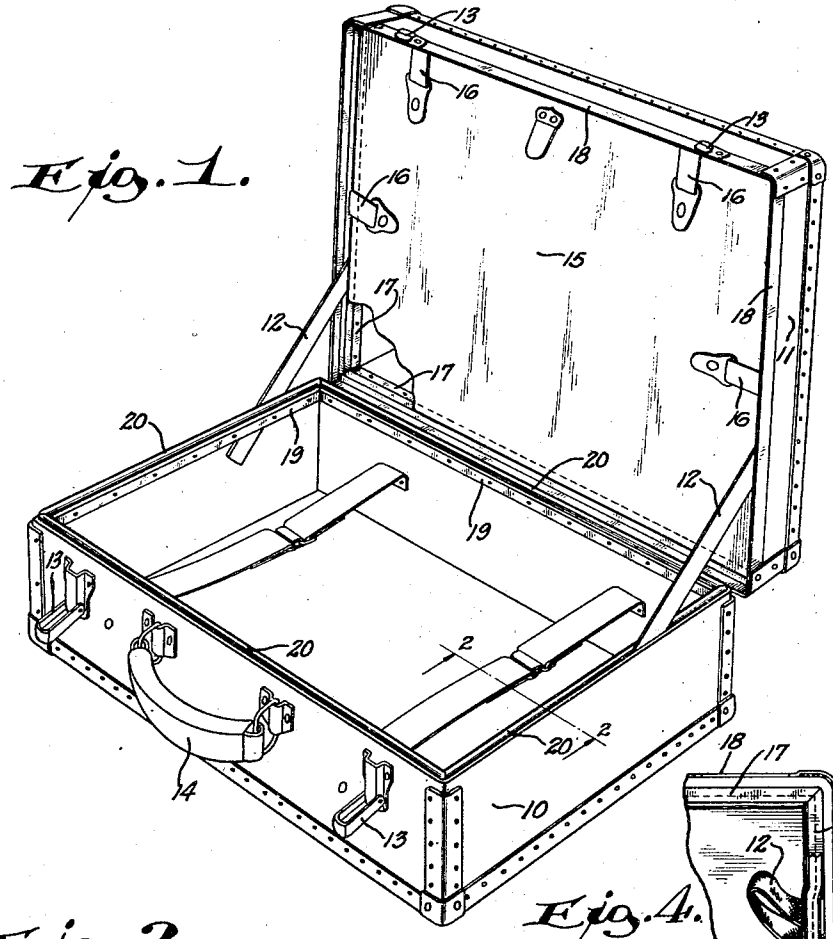


Fig. 2.

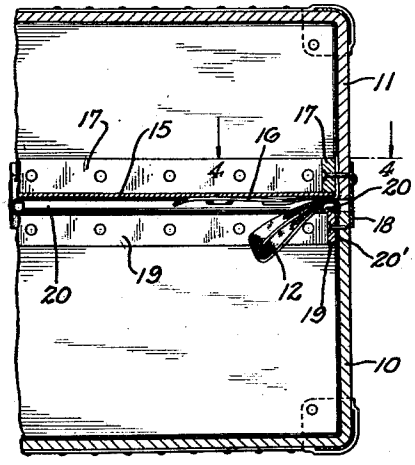
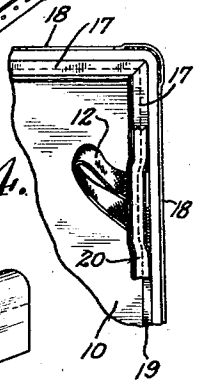


Fig. 4.



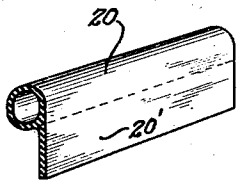


Fig. 3.

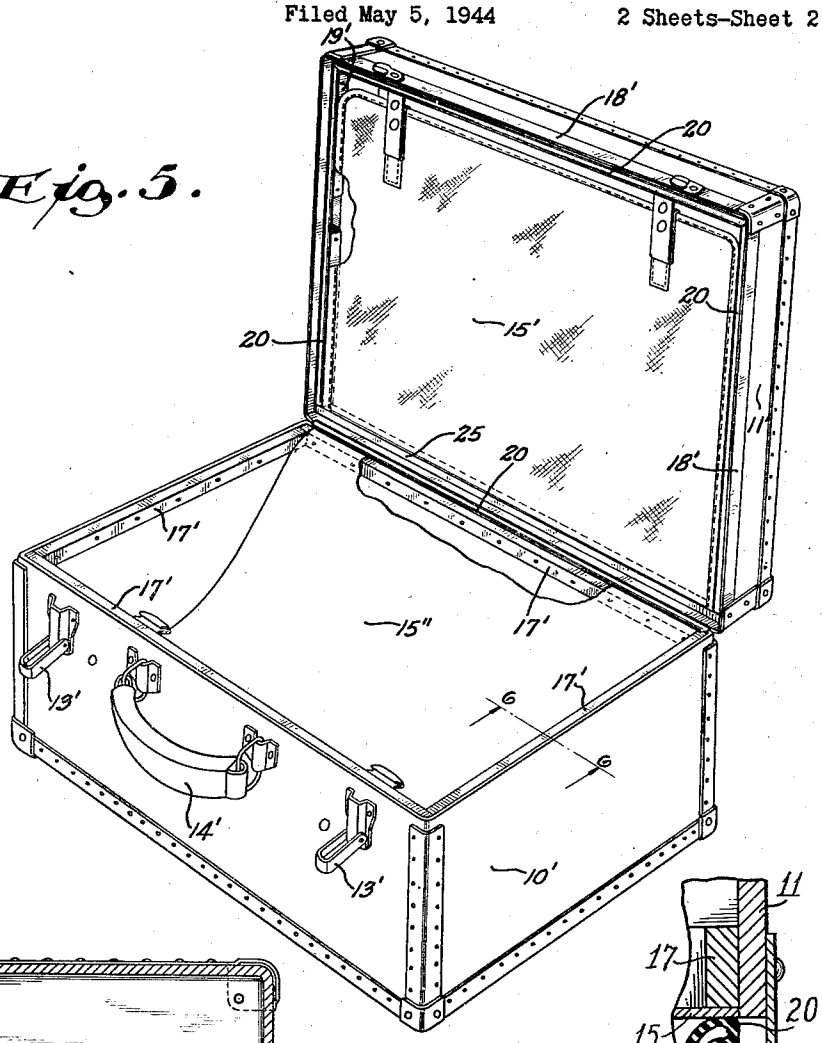
INVENTOR.
Alois A. Ritter,
BY Morsell & Morsell
ATTORNEYS.

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Fig. 5.



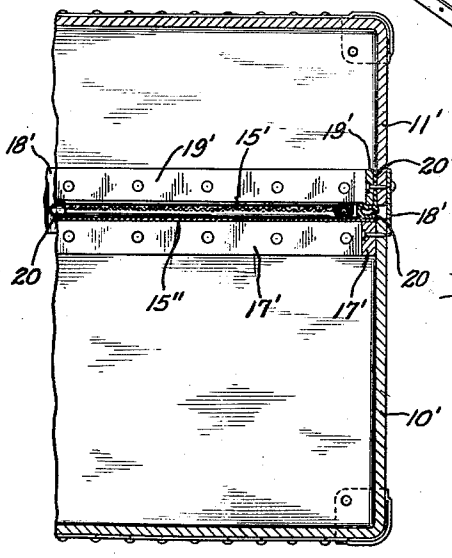


Fig. 6.

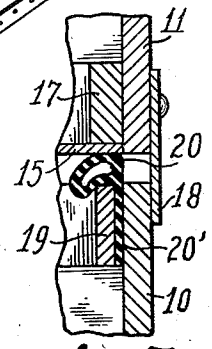


Fig. 7.

INVENTOR.
Alois A. Ritter,
BY
Morsell & Morsell
ATTORNEYS.

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SEALING MEANS FOR LUGGAGE CASE SECTIONS

Alois A. Ritter, Racine, Wis., assignor to Hartmann Company, a corporation of Wisconsin

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1 Claim. (Cl. 190—28)

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This invention relates to improvements in sealing means for luggage case sections.

A standard luggage or garment-carrying case comprises a pair of complementary sections arranged relative to each other so that when the case is closed the normally open faces of each section meet with the free edges of the surrounding walls of one section being engaged within the metal valances on the other section. This arrangement does not provide for entirely dust and weather tight joints and is objectionable with respect to luggage cases designed particularly for service men for airplane and boat travel. In the case of aviators and servicemen traveling by airplane, for instance, their luggage must be temporarily piled in the open on dusty landing fields and the whirl of airplane propellers creates unusual dust conditions, with the result that dust laden air seeps into their luggage cases through the crevices between the meeting edges of the case sections and soils or impregnates the garments or uniforms therein.

With the above in mind it is, therefore, a primary object of the present invention to provide sealing means for luggage case sections which will eliminate the objections noted by affording dust and weather tight seals between the meeting wall portions of closed luggage case sections and by completely, resiliently filling the crevices between said wall portions.

A further object of the invention is to provide sealing means for luggage case sections with which the sections may be easily and inexpensively equipped without impairing the appearance or full utility of the same.

A further object of the invention is to provide resilient sealing strips for luggage case sections, which strips, when the case sections are closed, will flow or form into and over crevices and wall edges to seal the same and which will also deform over and about stays, straps, flaps and appliances which may cause protuberances or uneven surfaces adjacent the meeting edges of complementary case sections.

A further object of the invention is to provide resilient synthetic rubber sealing strips for luggage case sections, said strips being adapted to be squeezed and deformed when the case sections are closed, and flexing back to their normal conditions when the case sections are open, the strips being of such a nature that they will last indefinitely without permanent deformation or loss of resiliency.

A further object of the invention is to provide resilient sealing strips for luggage case sections and mounting means for said strips with the latter arranged to form shoulders cooperating with the strips whereby the strips are not only compacted between abutting surfaces but portions of the strips squeeze outwardly thereof against exterior shoulders for more complete and surface irregularity compensatory sealing purposes.

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A further object of the invention is to provide sealing means for luggage case sections which are of very simple construction, are strong and durable and efficient in use, and are well adapted for the purposes set forth.

With the above and other objects in view the invention consists of the improved sealing means for luggage case sections, and the parts and combinations thereof as set forth in the claim, and all equivalents thereof.

In the accompanying drawings in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a perspective view of one form of open luggage case equipped with the improved sealing means applicable thereto;

Fig. 2 is an enlarged fragmentary, sectional view indicated by line 2—2 in Fig. 1 but showing the luggage case sections closed;

Fig. 3 is an enlarged fragmentary perspective view of a resilient sealing strip such as is mounted adjacent a free edge of a luggage case section;

Fig. 4 is a fragmentary detail sectional view taken on line 4—4 of Fig. 2;

Fig. 5 is a perspective view of another form of open luggage case equipped with the improved sealing means applicable thereto;

Fig. 6 is an enlarged fragmentary sectional view indicated by line 6—6 in Fig. 5 but showing the luggage case sections closed; and

Fig. 7 is an enlarged, fragmentary, detail sectional view through a pair of case section walls in their closed relationship showing the deformation of the sealing strip compressed between cooperating wall-carried rails.

Referring now more particularly to the form of the invention shown in Figs. 1 to 4 inclusive, it will appear that the body and cover sections of a luggage case are indicated by the numerals 10 and 11 respectively. Each of the case sections has an open face and improved means for resiliently sealing the crevices and joints as between the meeting edges surrounding the edges of the walls of the case sections, when the case sections are in closed condition, as in Fig. 2, is the particular feature of the present invention. As is customary, the rear walls of the body and cover sections are hinged together and flexible stays 12 are provided as between said sections for

limiting the opening movement of the cover. The sections are equipped with complementary latch members 13 for securing the case sections in closed condition, and a conventional handle 14 permits manual carrying of the case.

In the form of the invention under consideration the open face of the cover section 11 is adapted to be closed and the garments therein protected by a relatively rigid panel 15 which is hinged along its inner edge and is inset slightly relative to the free edges of the section walls. Straps 16 carrying snap fasteners or the like releasably hold said panel in its closing relationship. Shoulder-forming strips or rails 17 are secured around the inner free wall portions of the cover section with the outer faces of the same being slightly inwardly of the plane of the panel 15, permitting the panel to rest thereon. These rails form rigid surfaces cooperating with other means to be described in effecting the improved seal. The exterior wall portions of the cover surrounding the open face also carry metal valance strips 18 adapted to exteriorly overlap the adjacent wall portions of the body section 10 when the case is closed.

Mounted on the inner surfaces of all of the walls of the body section 10 of the case so as to be flush with the free edges of said walls are shoulder-forming strips or rails 19. Along each free edge of the body section walls is mounted a resilient sealing strip 20, a portion of one of the same being shown in detail in Fig. 3. It will be observed that a sealing strip comprises an elongated tubular portion, normally of substantially circular cross-section, and a securing flange 20' integral with the tubular portion and extending away therefrom tangentially. For the mounting of a sealing strip, its flange 20' is secured between the inner face of a rail 19 and the adjacent inner wall portion of the case section, with the tubular portion of the sealing strip being directed inwardly and resting on the surface of the rail 19, as shown in Figs. 1 and 2. It will be observed from Figs. 2 and 4 that the rails 17 are of somewhat greater breadth than the rails 19. This is of great importance because when the case sections are closed, as in Fig. 2 the wider upper rail pressing on any interposed member compresses the tubular portion of the sealing strip into crevices and around the shouldered edges of the lower rail to enhance the effectiveness of the seal. The resilient sealing strips 20 are preferably formed of synthetic rubber which is highly advantageous in the present invention because of the ability of the material to compress, deform, flex and more or less flow into and about the crevices sought to be sealed, much like putty, and to thereafter spring back to its original shape and disposition when the case sections are open, without deterioration.

The manner in which the improved sealing means operates is no doubt clear from the foregoing description and from Figs. 2 and 4 of the drawings. When the case sections are closed the tubular portions of the sealing strips 20 are not only compressed but, by virtue of the formation and disposition of said strips adjacent a shoulder forming rail, the tubular portions of the strips are directed in compressed and deformed condition inwardly and the same project beyond the compressing faces of the engaged rails and additionally "flow" over or cover edges and steps of the said rails. In the form of luggage case disclosed in Figs. 1 and 2, portions of the strips tightly compress against peripheral surface portions of

the relatively rigid panel 15 and sealingly engage the same, notwithstanding the fact that the plane of the panel may be irregular due to its being bulged by garments packed interiorly thereof. The sealing strips also nicely take care of surface irregularities or protuberances which are caused by the folded stays 12 or the straps 16, by deforming over the same, as shown in Fig. 4. The improved sealing arrangement is such that when the case is closed, no matter where it is positioned and to what conditions it is subjected, the case section joints or meeting wall crevices interiorly of the valances 18 are completely sealed against the entrance of dirt and dust, whereby the contents of the luggage case are fully protected.

The form of luggage case disclosed in Figs. 5 and 6 differs from the luggage case of Figs. 1 and 2 primarily in that the open faces of both of the sections 10' and 11' have withdrawable covering means comprising flexible curtains 15' and 15'', and the case construction therefore requires a different disposition of the rails and sealing strips. In the cover section 11', and set inwardly from the free projecting edges of the valance 18', are narrow rails 19' only disposed along the front longitudinal edges and the sides, the strips on the latter having their inner ends in abutment with a frame strip 25 to which the inner edge of the flexible curtain 15' is attached. Said cover strips secure between them and the wall portions the integral flanges 20' of resilient sealing strips 20 similar to those previously described.

All of the inner walls of the body section 10' of the case, adjacent the open face of said section, carry relatively broad rails 17' but only the rear longitudinal rail has mounted thereon a resilient sealing strip 20. The latter rail also serves as an attaching means for the inner edge of the curtain 15''. It will then be seen that when the case sections are closed, as in Fig. 6, the cover-carried sealing strips 20 along the front and side margins abut the body carried wide rails 17', and the body-carried sealing strip 20 along the rear margin abuts the cover-carried rail 25. This effects a complete seal for the entire periphery of the luggage case and the sealing means are compressed, deform and "flow" in the same manner as was described in connection with the principal form of the invention. The arrangement insures rigid compression surfaces and abutments for all of the sealing strips regardless of bulges or irregularities caused by the flexible curtains 15' and 15''.

From the foregoing description, it will be seen that the improved sealing means for luggage case sections is simple and novel, is easily applied to various forms of luggage cases, and is well adapted for the purposes described.

What is claimed as the invention is:

In a container formed of a pair of complementary, open-faced, box-like sections, the free edge portions of the walls of one section being in adjacency with the free edge portions of the walls of the other section when the container is closed, relatively narrow supporting rails mounted on the inner faces of certain of the walls of the section adjacent the free edges thereof, resilient, rubber-like, sealing strips mounted on said supporting rails and co-extensive with the wall edges thereadjacent, each sealing strip comprising a deformable tubular portion lodged on and extending inwardly of an outer face of its supporting rail and an integral flat flange interposed between its supporting rail and the surface of

the wall carrying said rail, relatively broad compression rails mounted on the inner faces of the walls of the other section corresponding to the walls of the first section carrying the sealing strips, the adjacent faces of the supporting rails and compression rails being slightly spaced apart to receive and compress the sealing strips interposed therebetween, and appurtenances within the container forming irregular protuberances as between portions of the adjacent supporting and compression rails, the varying breadths of the supporting and compressing rails forming internal stepped shoulders when the case sections are closed, said sealing strips, when the case sections are closed, being compressed between the adjacent rails and deformed laterally inwardly and being forced by said compression rails over the shoulders and beyond the crevices between said rails to fill and cover edges of said crevices and to deform and compress over the irregular protuberances formed by the portions of the appurtenances adjacent the cooperating rails.

ALOIS A. RITTER.

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