May 31, 1949. H. FREEMAN 2,471,612

THERMOPLASTIC LUGGAGE FRAME

Filed Dec. 22, 1945

Fig. 1.

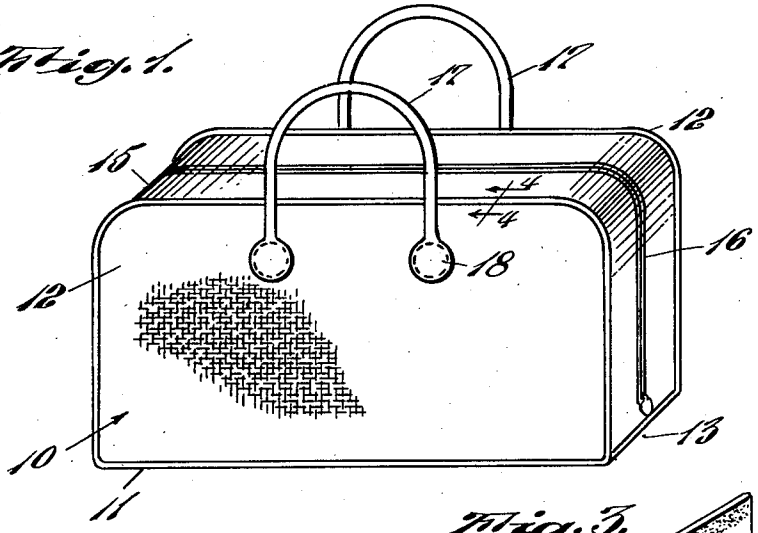


Fig. 2.

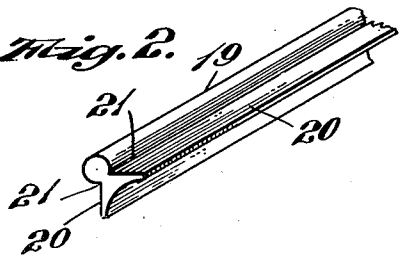


Fig. 3.

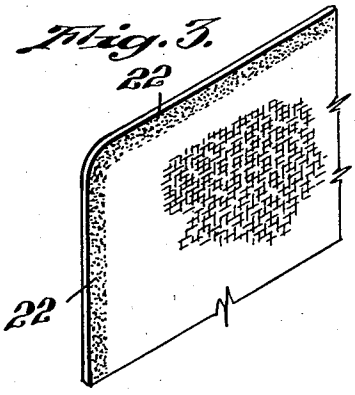


Fig. 4.

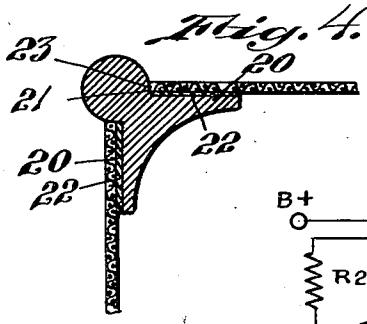
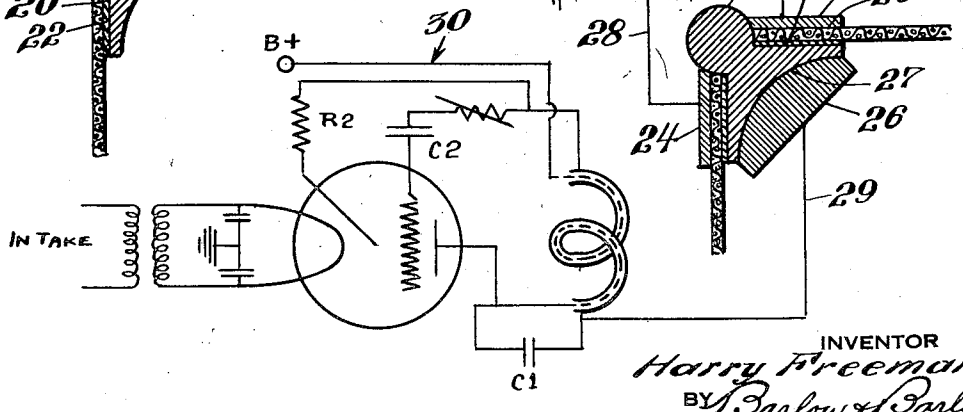


Fig. 5.



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Patented May 31, 1949

2,471,612

UNITED STATES PATENT OFFICE

2,471,612

THERMOPLASTIC LUGGAGE FRAME

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Application December 22, 1945, Serial No. 636,661

1 Claim. (Cl. 190—53)

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This invention relates to improvements in luggage and the method of making the same, more particularly to luggage the walls of which are flexible.

Luggage of this general construction in which the walls are made of cloth material and the like usually have the walls sewed in place. This is a relatively expensive and slow method of securing the walls of luggage in place.

An object of this invention is to provide a thermo-plastic frame having flanged portions with a rib between the flanged portions which form shoulders for abutting the walls of a luggage unit against the shoulders for being readily secured to the frame.

With these and other objects in view, the invention consists of certain novel features of construction as will be more fully described and particularly pointed out in the appended claim.

In the accompany drawing:

Fig. 1 is a perspective view of a piece of luggage embodying my invention;

Fig. 2 is a perspective view of a fragmentary portion of a section of stock employed for making the frame;

Fig. 3 is a perspective view of a fragmentary portion of one of the walls of the luggage;

Fig. 4 is a sectional view taken substantially on line 4—4 of Fig. 1; and

Fig. 5 is a view illustrating diagrammatically an electric circuit forming part of the equipment employed for bonding the walls of the luggage to the frame.

In proceeding with the invention, I make a frame of a suitable thermoplastic material such as vinylidene chloride which is extruded to provide a proper cross-section having portions at the proper angle to each other providing surfaces for receiving the walls of the luggage to be secured thereto. The edge portions of the walls which may be of a cloth material are coated with a film of a suitable thermoplastic material, preferably similar to the material used in making the frame. With the walls held in proper position on the frame, the same are joined by welding to each other by suitable equipment for generating heat, such as by means of a high frequency of electric current in the radio frequency range.

Referring to the drawings for a more detailed description of the invention, 10 designates generally a piece of luggage having frames 11 made of an extruded vinylidene chloride. The frames may support side walls 12 and be connected by a flexible bottom wall 13 and edge walls 15, all joined to these frames by means of a weld bond

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to be hereinafter described. The wall 15 is slitted to provide an entrance and the edges of the slit have secured thereto a fastening device 16 of the so-called "zipper" type to close or open the entrance. Handles 17 are provided for carrying the luggage and these may be secured to the walls 12 in any suitable manner such as by sewing the same as at 18.

The frame material is extruded in a form to provide a rib 19 from both sides of which there extend portions 20 providing shoulders 21. The walls of the luggage in the present instance are made of a cloth material and cut to the proper shape. A film of a suitable thermoplastic material, preferably the same as that from which the frame is made, is applied to the edge portions 22, 22 of the walls. The coated walls are positioned to overlay and engage the portions 20 with the edges 23 of the walls abutting the shoulder 21.

With the walls in proper position electrodes 24 of a proper shape are positioned to overlay and engage the outer surface of the thermoplastic coated edge portions of the walls as at 25, shown in Fig. 5. An electrode 26 is positioned to engage the inner surface of the frame as at 27, shown in Fig. 5. These electrodes are connected by conductors 28 and 29 to a source of high frequency electric current, generally designated 30, which will provide a high frequency field to produce sufficient heat to weld join the coated edge portions of the walls to the frame. The source of electric power herein shown comprises an oscillating circuit of the so-called Hartley type as shown in Patent 1,356,763. This circuit is well known in the art and it is not deemed necessary to describe the same for a clear understanding of the invention.

I claim:

A luggage unit comprising a body portion having a plurality of walls, a thermoplastic frame extending completely about the edges of said walls and having a central rib and flange portions, said flange portions having outer surfaces extending from opposite sides of said rib substantially at right angles to each other to provide shoulders on said ribs, said shoulders and said surfaces forming exterior angles of at least ninety degrees, marginal portions of said walls being positioned adjacent said shoulders and in contact with said surfaces, said rib having a protuberance joining said shoulders and positioned outwardly of planes containing the walls, and said walls being weld bonded to said flanges.

HARRY FREEMAN.

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