

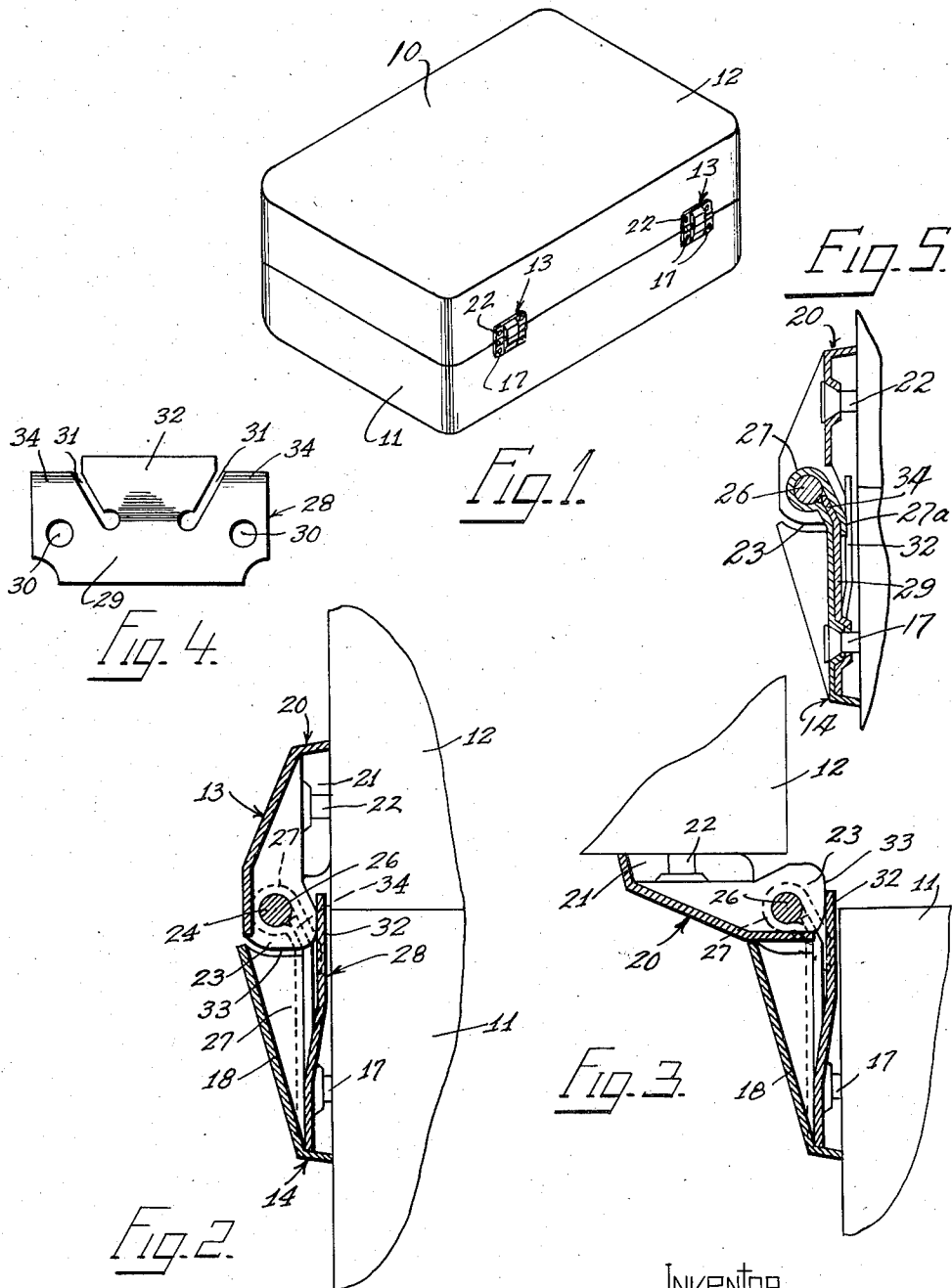
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LUGGAGE HINGE

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LUGGAGE HINGE

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The present invention is directed to an improved hinge assembly particularly useful in conjunction with pieces of luggage and the like.

In addition to providing a hinge structure which is sufficiently strong and durable to meet the requirements of an acceptable luggage hinge, the hinge assembly of the present invention is particularly designed to provide a pair of hinge members which cooperate in a manner to hold the cover of the luggage open with respect to the receptacle portion thereof, to facilitate packing of the luggage.

The luggage pieces on the market today are not, for the most part, balanced or in a state of static equilibrium when the cover is open with respect to the receptacle. As sometimes happens, the cover will stay open initially but has a tendency to close by its own weight, frequently when both hands of the packer are occupied with articles to be packed. Naturally, this condition is quite annoying, and there is a definite need for a luggage construction which embodies a device to hold the cover of the luggage open in a positive manner, provided the cost of such a device does not add a material amount to the cost of the luggage. The satisfaction of that need is the principal object of the present invention.

Another object of the present invention is to provide a piece of luggage with an improved hinge assembly which incorporates a positively acting mechanism to hold the cover of the luggage against closing by its own weight.

A further object of the invention is to provide an inexpensive hinge mechanism particularly adapted for luggage and composed entirely of simple metal stampings.

Other objects and features of the present invention will be apparent to those skilled in the art from the following description taken in conjunction with the attached sheet of drawing, which illustrates a preferred embodiment of the invention.

On the drawing:

Figure 1 is a view in perspective of a piece of luggage including a pair of hinge assemblies of the present invention;

Figure 2 is an enlarged fragmentary view of the hinge assembly, partly in cross-section, illustrating the position of the elements of the hinge assembly while the cover is closed;

Figure 3 is a view similar to Fig. 2, but illustrating the position of the elements when the cover is open;

Figure 4 is a plan view of the spring member included in the hinge assembly; and

Figure 5 is a view of the hinge assembly, partly in cross section illustrating more particularly the hinge member of the present invention.

In Fig. 1 reference numeral 10 indicates generally a suitcase construction including a lower receptacle portion 11 and a cover member 12 cooperating therewith. Actually, in many types of suitcase design, such as those known as the "two-suiter," the cover 12 itself may be a

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receptacle with substantially the same mass and volume as the receptacle 11. For convenience, however, the upper closure member will be referred to as the cover and the lower member as the receptacle.

5 The receptacle 11 and the cover 12 are hingedly connected together by means of a pair of spaced hinges generally indicated at numeral 13 in Fig. 1. As best seen in Figs. 2 and 3, each of the hinges 13 may include a lower hinge member 14 having a pair of spaced apertures provided therein to receive a pair of rivets 17 which fasten the lower hinge member 14 to the back of the receptacle 11.

15 The lower hinge member 14 includes a raised, inclined central portion 18 which cooperates with an upper hinge member 20 to limit pivotal movement of the latter. The upper hinge member 20 also includes a pair of spaced apertures through which a pair of rivets 22 extend to secure the upper hinge member 20 to the cover 12 of the luggage. A pair of intumed marginal portions 21 on the hinge member 20 are provided to abut the rear of the cover 12.

25 As best seen in Figs. 2 and 3, the upper hinge member 20 has a pair of spaced camming portions 23 with apertures 24 extending therethrough. A pivotal connection between the upper hinge member 20 and the lower hinge member 14 is provided by inserting a pin 26 through the apertures 24 in the cam portions 23 and then bending over opposed end portions 27 on the lower hinge member 14, the opposed end portions 27 being spaced at a distance greater than the distance between the camming portions 23. As illustrated in Figs. 2 and 3, the end portions 27 are bent around the pin 26 to provide the hinged connection.

35 The camming portions are designed to cooperate with a spring member generally illustrated at numeral 28 in the drawing, the latter being composed of relatively flat spring plate 29 (Fig. 4). A pair of spaced apertures 30 is provided in the plate 29, the distance between the apertures 30 being identical to the distance between the apertures receiving the rivets 17, so that the two sets of apertures will be put in registry when the spring plate 29 is disposed immediately behind the lower hinge member 14. The rivets 17 thereby serve to secure both the spring plate 29 and the lower hinge member 14 to the rear of the receptacle 11.

45 The spring plate 29 also includes a pair of slots 31 formed therein which define a flexible leaf portion 32 and bent upper tab portions 34 in spaced relation to the leaf portion 32. As illustrated in the drawing, the leaf portion 32 extends immediately behind the camming portions 23 formed in the upper hinge member 20 and is continually in contact therewith. The pressure of the camming portions 23 urges the leaf portion 32 rearwardly, leaving the ends of the tab portions 34 abutting the pin 26. As best illustrated in Figure 5, the end portion 27 is bent around the pin 26 leaving the extreme end portion 27a free. To prevent the possibility of having the pin 26 work out of the bight of the loop provided by the end portion 27 around the pin 26 the upper tab portions 34 of the spring plate 29 are received in abutting relation with the pin 26.

50 The shape of the camming surfaces is such that as the cover is being opened with respect to the receptacle, the camming surfaces flex the leaf portion 32 until an over-center position is reached, as illustrated in Fig. 3, in which the leaf portion 32 abuts a substantially planar portion 33 on the camming surface. In this position, the spring action of the leaf portion 32 positively resists further pivotal movement of the cover 12 with respect to the receptacle 11 while the upper hinge member engages the inclined central portion 18 of the lower hinge member

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14. As a result, the cover 12 cannot close by virtue of its own weight acting on the pivotal axis of the pin 26, since most of the weight is concentrated rearwardly of the axis of suspension. At the same time, the cover can be reclosed when desired by simply applying sufficient pressure to overcome the bias provided by the leaf spring portion 32.

The hinge assembly of the present invention thus provides a positively acting means in conjunction with a hinge assembly to keep the luggage cover in an upright position with respect to the receptacle portion of the luggage during packing. Most of the elements of the hinge assembly can be made from simple sheet metal stampings, making the hinge quite inexpensive to manufacture. Furthermore, the spring mechanism employed is invisible to the eye and not in a position where it might catch upon clothes or other articles being packed.

It will be evident that various modifications can be made to the described embodiment without departing from the scope of the present invention.

I claim as my invention:

1. A hinge assembly comprising a pair of cooperating hinge members, one of said hinge members having bent over end portions, a pin extending through said bent over end portions, and providing a pivotal axis between said hinge members, a spring member carried by one of said hinge members, said spring member having a centrally disposed flexible portion and spaced end portions abutting said pin to prevent displacement of said pin from said bent over end portions, and a cam formed on the other of said hinge members arranged to abut said flexible portion in one position of said hinge members to thereby resist pivotal movement of said hinge members about said pin.

2. A hinge assembly comprising a pair of cooperating hinge members, one of said hinge members having bent over end portions, a pin extending through said bent over end portions, and providing a pivotal axis between said

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hinge members, a spring member carried by one of said hinge members, said spring member having inwardly extending slots defining a flexible central portion and also being provided with bent end portions abutting the end portions of said pin to prevent displacement of said pin from said bent over end portions, and a cam formed on the other of said hinge members arranged to abut said flexible portion in one position of said hinge members to thereby resist pivotal movement of said hinge members about said pin.

3. A luggage hinge assembly comprising a pair of hinge members, each of said hinge members having a plurality of apertures for receiving securing means there-through, a pin providing a pivotal axis for said hinge members, a spring member having a plurality of apertures arranged to be put in registry with the apertures in one of said hinge members to permit said spring member to be secured jointly with said one hinge member to a portion of the luggage, said one hinge member also including bent over end portions providing bearing supports for the ends of said pin, said spring member having inwardly extending slots defining a flexible central portion and also being provided with bent end portions abutting the end portions of said pin to prevent displacement of said pin from said bent over end portions, and a cam formed on the other of said hinge members arranged to abut said flexible portion in one position of said hinge members to thereby resist pivotal movement of said hinge members about said pin.

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