

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number: 83300580.4

(51) Int. Cl.³: **A 45 C 13/36**

(22) Date of filing: 04.02.83

(43) Date of publication of application:
22.08.84 Bulletin 84/34

(84) Designated Contracting States:
AT BE CH DE FR GB LI LU NL SE

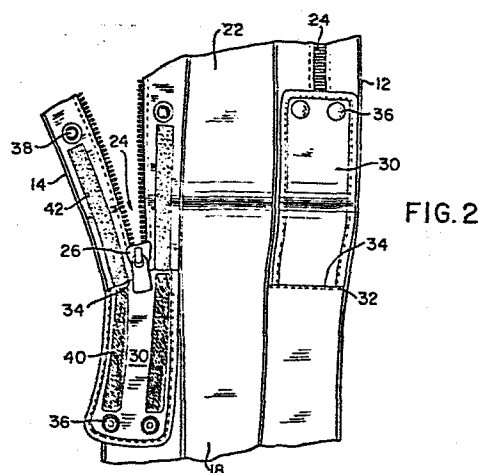
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(54) **Luggage with zipper closures.**

(57) A zipper protector is provided for a case or other item of luggage having one or more openings that are closable by one or more zippers (24) and that start in a bottom wall (18) of the case at a portion of the case which is near the corner where the bottom wall (18) meets an end (22), and extend around the corner and upwardly along the end wall, across a top wall (16) and down the other end wall of the case and around the corner at the other end of the case to terminate at the bottom wall (18) of the case. The protector comprises a releasably securable flap (30) of soft or rigid material pivotally attached (e.g. by stitching 32) to the bottom of the case and positioned so as to protect the portions of the zipper (24) in the lower corner of the case against damage by abrasion or impact.



LUGGAGE WITH ZIPPER CLOSURES

This invention relates to luggage with zipper closures.

Travel by air is, nowadays, a predominant form of travel. Along with the growth of the airline travel industry, there has been a revolution in the luggage industry to devise luggage particularly suited for use by air
5 travellers.

Among the many considerations in designing such luggage, the most obvious factor to be considered is weight. The luggage to be carried on an aircraft is from a practical standpoint limited by weight as well as by size. In response to this consideration, various lightweight materials, both rigid
10 and soft, have been devised for use in modern luggage.

Another consideration, perhaps more important to the passenger than to the airline, is that of durability. The ability of airline baggage handlers and handling equipment to mar and destroy luggage is legendary. Thus, luggage manufacturers have devised materials for making luggage which are
15 not only lightweight, but durable -- possibly even nearly indestructible in "normal handling". As an offshoot of the consideration of durability, it has been found that in many respects soft, flexible luggage can withstand the rigours of baggage handling better than luggage made of rigid materials.

A plethora of luggage styles made of soft, semi-rigid and rigid
20 materials such as canvas, nylon, vinyl, leather and combinations thereof are currently being marketed. One feature common to many types of these is the closure used to secure the luggage from opening. This closure is the common zipper closure or zip fastener, often referred to simply as a zipper, which comes in a variety of materials, styles, sizes and grades.

25 The zipper may be made of plastic or metal and it may be of conventional construction or be of the coil type. The zippers are typically used to close and secure a large compartment. In such construction, each such large opening is secured by one or more zippers. Such an opening may start at the bottom of the case when it is in an upright position, at the
30 portion of the case which is near the corner where the end meets the bottom; extend around the corner and upwardly along that end; across the

top; and down the other end of the luggage and around the corner to the other end of the bottom to terminate in the bottom of the case near the other lower corner. By means of this construction, when the zipper is open the compartment may be opened fully to completely expose the contents of
5 the bag.

It has been found that such luggage, although generally resistant to damage, does suffer damage to the zippers at the lower corners.

The damage may occur in one of two fashions. The first is through abrasion. If the luggage is dragged or is in frictional contact with other
10 surfaces during transport or in high vibration environments, the zipper or tapes thereof can be damaged by the resulting abrasion. Further, if the zipper is of the coil type, the cord which links the coils and thereby acts as a spacer may be damaged by such action. Secondly, the lower corner and the zipper contained therein are the most likely areas to suffer impact damage
15 caused by rough handling of baggage.

US Patent No. 3 292 748, issued 20 December, 1966 to Rifkin, discloses a bag having a continuous zipper closure extending along both ends and the top. The zipper terminates, at each end thereof, on the end walls. It does not extend into the bottom wall. A continuous seal is provided along
20 the entire length of the zipper closure by mating pieces of Velcro (trademark). At the end of the zipper where the slide comes to rest there are a pair of covering flaps which cover the zipper slide. One of the flaps lies against the zipper slide and the other flap overlaps the first flap, the two flaps being held together by Velcro (trademark). These flaps are for the
25 purpose of protecting against fire. Obviously, the seal does not protect the zipper in the vulnerable corner area since the zipper does not extend into this area. Nor is there any teaching of a need for such protective function.

US Patent No. 4 098 376, issued 4 July, 1978 to Pelavin, discloses a garment bag having a longitudinal zipper closure and a pair of transverse
30 zipper closures. A hinged flap covers the area which the three zipper closures meet. This patent is obviously not directed to the protection of the zipper in the lower corner area.

US Patent No. 1 976 698, issued 9 October, 1934 to Gihon, discloses a handbag with a continuous zipper closure terminating at one end in a
35 circular opening which is provided to accommodate the handle of a tennis racket. When the opening is not needed, a flap is applied over the opening

with four snap fasteners. The opening does not extend past the ends of the bag into the bottom and the flap is not directed to the protection of a zipper in this vulnerable corner area.

5 US Patent No. 2 436 369, issued 24 February, 1948 to Allan, shows a mail bag cover having a continuous opening extending across the top and part way down the sides. A longitudinal flap closes over the zipper to protect against the weather. This patent obviously has nothing to do with the protection of a zipper against abrasion and impact injuries in the lower corners.

10 US Patent No. 1 862 614, issued 14 June, 1932 to Turano, discloses a construction wherein a longitudinal covering strip is fixed at one end to the bag and at the other end to the zipper slide. Thus, when the zipper is closed, the strip is pulled taut and covers the zipper. This patent is unrelated to the protection of luggage zippers in the lower corner region.

15 Finally, US Patent No. 2 442 044, issued 25 May, 1948 to Howard, discloses a complicated construction for a laundry bag which includes a tongue-shaped element which lies over a zipper and, in turn, is held in place by another zipper element. The problem of lower corner abrasion and impact, and certainly not its cure, is not considered in this patent.

20 According to the invention there is provided a piece of luggage having a front wall, an opposed rear wall, a pair of opposed end walls, a top wall, and a bottom wall, the top and end walls being divided by a continuous opening starting in and extending between opposite ends of the bottom wall to allow the piece of luggage to open substantially flat, and at least one
25 zipper closure affixed to the continuous edges of the opening and extending into opposite end portions of the bottom wall, characterised in that an elongate flap is hingedly fixed at one end to each said end portion of the bottom wall, the flap extending upwardly over the corresponding end portion of the adjacent end wall and being releasably secured to the end wall,
30 whereby the flap protects and cushions the zipper closure at the corner portion where the end wall meets the bottom wall.

A preferred embodiment of the present invention described hereinbelow comprises a piece of luggage that has a flap positioned around at least one lower corner thereof to protect a zipper or zippers from the
35 type of damage described, that is to say damage resulting from rough handling, dragging and other frictional contact in transit arising from

vibration. Such protection may be provided whether the luggage is soft, semi-rigid or rigid. The flap may be made of the same material as the luggage or of some other material. The flap may be flexible or rigid. If rigid, it may be hinged. Each such flap extends over one of the vulnerable lower corners of the luggage to protect the zipper against damage. It is secured against accidental displacement but must be removable or releasable to allow the case to fully open. The flap is secured at its lower end to the body of the luggage, preferably by stitching or, if made from a rigid material, by a hinge member. At the upper end, the flap is secured to the body of the luggage at either side of the zipper. The securing means in the preferred embodiment is a combination of two such means. The first such means in the preferred embodiment comprises snap fasteners, halves thereof at upper corners of the flap cooperating with mating snap fastener halves at corresponding locations in the body of the luggage. The second fastening means in the preferred embodiment is a strip of cooperating hooks and loops sold under the trademark Velcro. Thus, by the use of two independent securing means, the protective flap is securely fastened astride the vulnerable lower corner of the zipper.

The invention will now be further described, by way of illustrative and non-limiting example, with reference to the accompanying drawing, in which like references indicate like items throughout, and in which:

Figure 1 is a perspective view of a typical prior art travelling bag construction with a single opening;

Figure 2 is a fragmentary perspective view, on an enlarged scale, of the lower corner of a travelling bag having two openings and embodying the present invention; and

Figure 3 is a partial front elevational view of said lower corner.

Figure 1 shows a typical travelling bag or suitcase 10 that comprises front and rear walls 12 and 14, respectively, top and bottom walls 16 and 18, respectively, and end walls 20 and 22 respectively. Typically, a continuous opening starts in the bottom wall 18 at its opposite ends and extends along the end walls 20 and 22 and the top wall 16. Thus, when the bag is opened, it lies flat, since the bottom wall 18 is either hinged longitudinally or the bag is so flexible that a longitudinal fold line appears along the longitudinal axis.

The continuous opening is provided with one or more zipper closures 24 extending beyond the lower ends of the end walls 20 and 22 and into the

bottom wall 18 of the bag 10. If a single zipper is used, the zipper 24 could be equipped with a single slider which would travel from one end of the zipper to the other or, as illustrated in Figure 1, a pair of sliders 26 and 28 may be used with a single continuous zipper, which sliders move to opposite
5 ends of the zipper to open the bag and which can either be moved to a location centrally of the top wall as shown in Figure 1 or can be made to meet anywhere along the length of the zipper. The normal method of securing the opening in the closed position is to lock the zipper sliders together by means of a small padlock.

10 The area most vulnerable to damage is the bottom corner area outlined in phantom in Figure 1 and its counterpart area at the opposite side of the bag. As previously noted, such damage can be caused by abrasion when the bag is dragged or otherwise in vibratory contact with another surface, or by impact injury through rough handling. It is for the purpose of
15 protecting these vulnerable areas from damage that the arrangement described below was developed.

Attention is now directed to Figure 2, which shows a bag or case embodying the invention and having a pair of openings in a spaced apart, parallel relationship, with each of the openings provided with one or more
20 zippers 24. A covering flap 30 is provided in the lower corner where an end wall 22 (or 20) meets the bottom wall 18. The flap 30 is fixed at its lower end to the bottom wall 18 by any suitable means, a preferred such means being stitching 32. Thus, a hinge line 34 is formed at the lower end of the flap 30. At the upper end of the flap 30 are a pair of snap fastener elements
25 36. The snap fastener elements 36 are disposed in upper corners of the flap 30 and cooperate with mating snap fastener elements 38, which are fixed to the end wall 22 (or 20) at either side of the zipper 24. Extending downwardly from the snap fastener elements 36 and 38 are hook and loop fabric tapes 40 and 42, such as those sold under the trademark Velcro. Each of the tapes 40
30 and 42 extends from the corresponding snap fastener element 36 and 38 essentially to the hinge line 34. Thus, after the zipper 24 is closed, the flap 30 is applied over the zipper 24 whereby the elements 40 and 42 mutually engage and the snap fastener elements 36 and 38 engage. The flap 30 thereby protects and cushions the vulnerable lower corner area of the zipper
35 24 from damage.

Figures 2 and 3 show one lower corner only of the bag or case. The other lower corner is preferably similarly constructed.

Although in the arrangement shown in Figures 2 and 3 there are two openings each equipped with a zipper 24 and each having a flap 30, for example to divide the piece of luggage into two compartments, it will be evident that the arrangement could instead comprise a single zipper 24 and flap 30 at each lower corner. Alternatively, there could be more than two openings to divide the piece of luggage into more than two compartments.

Alternative methods may be used to secure the flap 30 to the bag or other item of luggage. For example, it could be hingedly fixed by rivetting rather than the stitching 32. Equally, instead of a soft flap, a rigid protector or flap, properly shaped and hinged at its lower edge, may be used, especially in connection with rigid or semi-rigid cases. While the invention has been illustrated with a piece of luggage having soft sides, it may equally well be used with rigid and semi-rigid constructions.

CLAIMS

1. A piece of luggage having a front wall (12), an opposed rear wall (14), a pair of opposed end walls (20, 22), a top wall (16), and a bottom wall (18), the top and end walls (16, 20, 22) being divided by a continuous opening starting in and extending between opposite ends of the bottom wall to allow
5 the piece of luggage to open substantially flat, and at least one zipper closure (24) affixed to the continuous edges of the opening and extending into opposite end portions of the bottom wall (18), characterised in that an elongate flap (30) is hingedly fixed at one end to each said end portion of the bottom wall (18), the flap extending upwardly over the corresponding end
10 portion of the adjacent end wall (20, 22) and being releasably secured to the end wall, whereby the flap protects and cushions the zipper closure (24) at the corner portion where the end wall (20, 22) meets the bottom wall (18).
2. A piece of luggage according to claim 1, wherein the flap (30) is hingedly fixed at said one end by stitching (32).
- 15 3. A piece of luggage according to claim 1, wherein the flap (30) is hingedly fixed at said one end by rivetting.
4. A piece of luggage according to claim 1, claim 2 or claim 3, wherein the flap (30) is releasably secured to the end wall (20, 22) by a pair of fastening means disposed at either side of the zipper closure.
- 20 5. A piece of luggage according to claim 4, wherein each fastening means comprises a snap fastener member (36) in an upper corner of the flap (30) mating with a cooperating snap fastener member (38) on the end wall (20, 22), and cooperating hook and loop fabric strips (40, 42) disposed between the snap fastener members (36, 38) and the hingedly fixed end (34)
25 of the flap (30).
6. A piece of luggage according to claim 5, which comprises a plurality of said openings in spaced apart, parallel relationship, whereby the item of luggage is subdivided into at least two compartments.

7. A piece of luggage according to claim 6, which comprises two of said openings in spaced apart, parallel relationship, whereby the item of luggage is subdivided into two compartments.

8. A piece of luggage according to claim 1, wherein the flap is made of
5 a rigid material which is hinged at one of its edges.

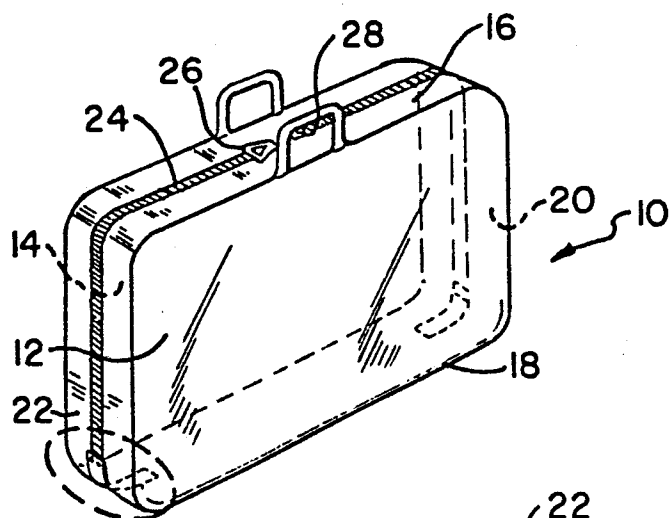


FIG. 1

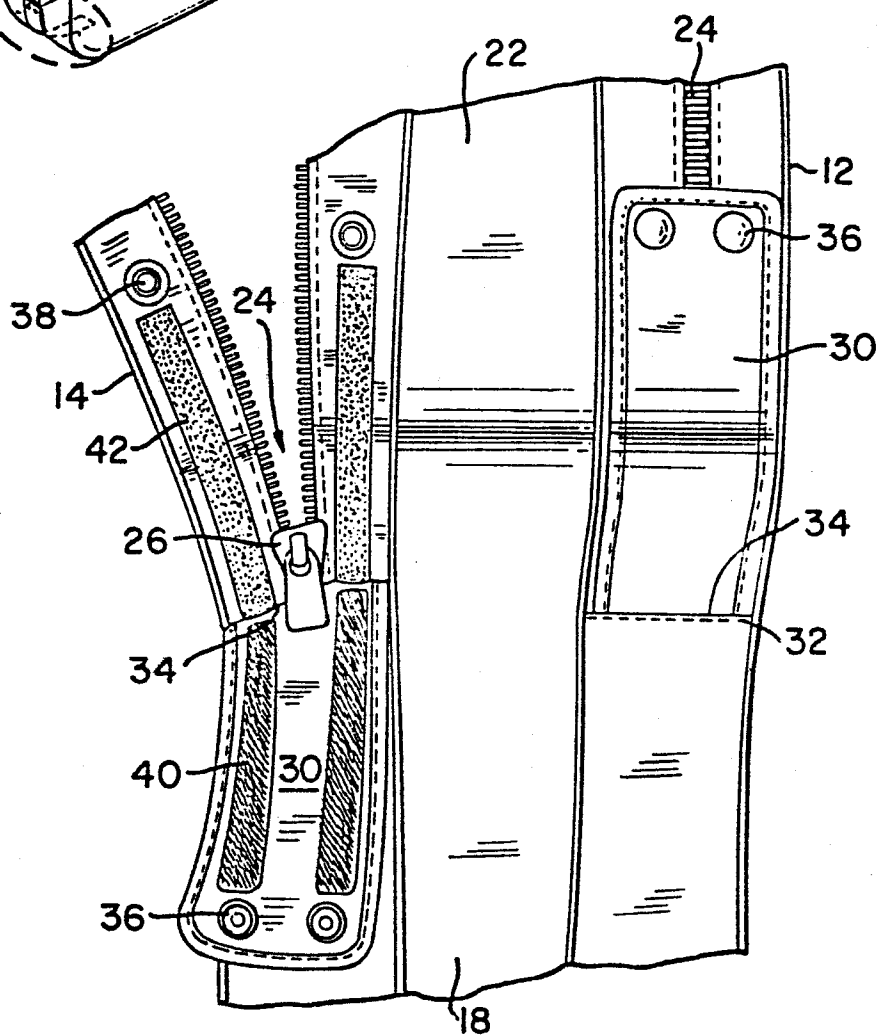


FIG. 2

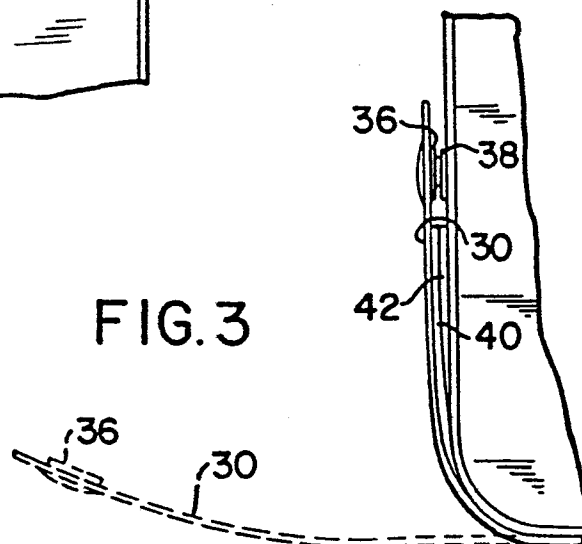


FIG. 3



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
A	GB-A- 603 018 (WOLF) * Page 3, lines 78-81; figure 1 *	1,2,4 5	A 45 C 13/36
A	--- GB-A- 627 282 (BLACKMAN LEATHER GOODS) * Page 3, line 123 - page 4, line 30; figures 1-4 *	1	
D,A	--- US-A-3 292 748 (RIFKIN) * Figures 1,2 *	5	
D,A	--- US-A-2 436 369 (ALLEN) -----		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl. ³) A 45 C
Place of search THE HAGUE		Date of completion of the search 04-10-1983	Examiner SIGWALT C.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			