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(54) **POWDER SKIRT ZIPPER SYSTEM**

See application file for complete search history.

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(56) **References Cited**

U.S. PATENT DOCUMENTS

1,298,043 A 3/1919 Hollander

(Continued)

FOREIGN PATENT DOCUMENTS

DE 3228720 2/1984

(Continued)

OTHER PUBLICATIONS

Patagonia Catalog, Fall 1997, Nitro™ II Jacket & Pant (cover page and p. 14).

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(57) **ABSTRACT**

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(60) Provisional application No. 60/518,120, filed on Nov. 6, 2003.

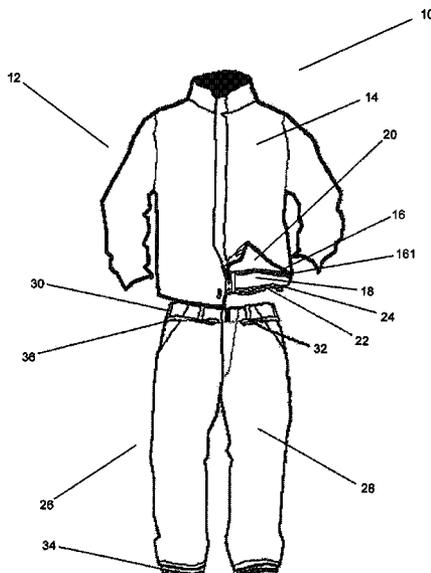
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(58) **Field of Classification Search** 2/69,
2/82, 85, 86, 87, 93, 94, 108, 71, 72, 70,
2/75, 80

Garments and garment sets are described that include a jacket having a powder skirt and trousers that can be attached to the powder skirt via at least one fastener. One embodiment of the invention includes a water resistant jacket, an elasticized powder skirt having at least two edges, the first of which is attached to the water resistant jacket, at least one fastener connected to the second edge of the powder skirt, water resistant trousers including a waist opening and two leg openings and at least one corresponding mating fastener connected to the trousers. The fastener and the corresponding mating fastener are constructed to detachably fix the powder skirt to the water resistant trousers. In several embodiments, the fastener and corresponding mating fastener are two mating zipper portions of standard length that can be combined to form a zipper irrespective of the garment size.

25 Claims, 5 Drawing Sheets



U.S. PATENT DOCUMENTS

1,476,831 A	12/1923	Pease	5,182,812 A	2/1993	Goldsby	
1,479,854 A	1/1924	Heller	5,343,564 A	9/1994	Reynolds et al.	
1,659,451 A	2/1928	Sweeney	5,794,268 A	8/1998	Pessey	
2,130,690 A	9/1938	Hyatt	6,079,051 A *	6/2000	Whinston et al.	2/108
2,152,575 A	3/1939	Urbon	6,108,815 A	8/2000	Majerfeld	
2,164,683 A	7/1939	Kessler	6,185,745 B1	2/2001	Alger	
2,216,852 A	10/1940	McMeekin	6,389,600 B1	5/2002	Di Maio	
2,242,365 A	5/1941	Muhr	6,665,878 B1	12/2003	Way	
2,390,462 A	12/1945	Rosenberg	7,047,568 B2 *	5/2006	Hofmann	2/70
2,465,286 A	3/1949	Silversteen	7,404,214 B2 *	7/2008	Woolcott et al.	2/85
2,562,234 A	7/1951	Gottschalk	2005/0022285 A1	2/2005	Berns et al.	
3,312,982 A	4/1967	Bradford	2005/0044605 A1	3/2005	Hofmann	
3,389,407 A	6/1968	Morrison	2005/0114979 A1 *	6/2005	Woolcott et al.	2/69
3,733,615 A	5/1973	Jaffee	2005/0166300 A1	8/2005	Tanaka	
3,737,916 A	6/1973	Grenier	2007/0266472 A1 *	11/2007	DuFaux	2/80
3,921,224 A	11/1975	Ingram, III				
3,965,487 A	6/1976	Mazur				
4,017,910 A	4/1977	Bente				
4,773,100 A	9/1988	Kuo				
4,987,610 A	1/1991	Hunt				
4,993,077 A	2/1991	Robison				

FOREIGN PATENT DOCUMENTS

EP	1332686 B1	1/2007
FR	002559652 A1	8/1985
FR	002803177 A3	7/2001
JP	10037010	2/1998

* cited by examiner

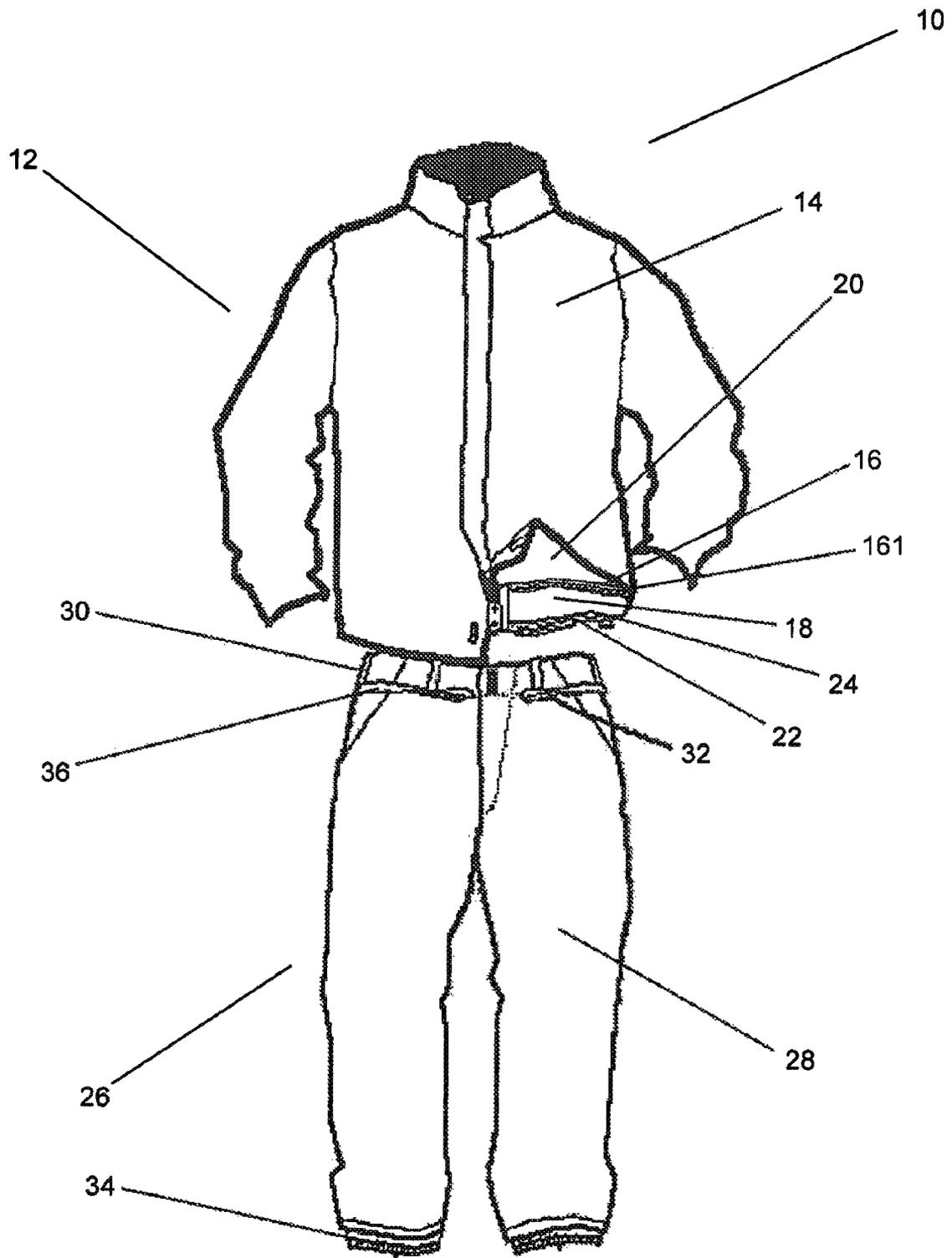
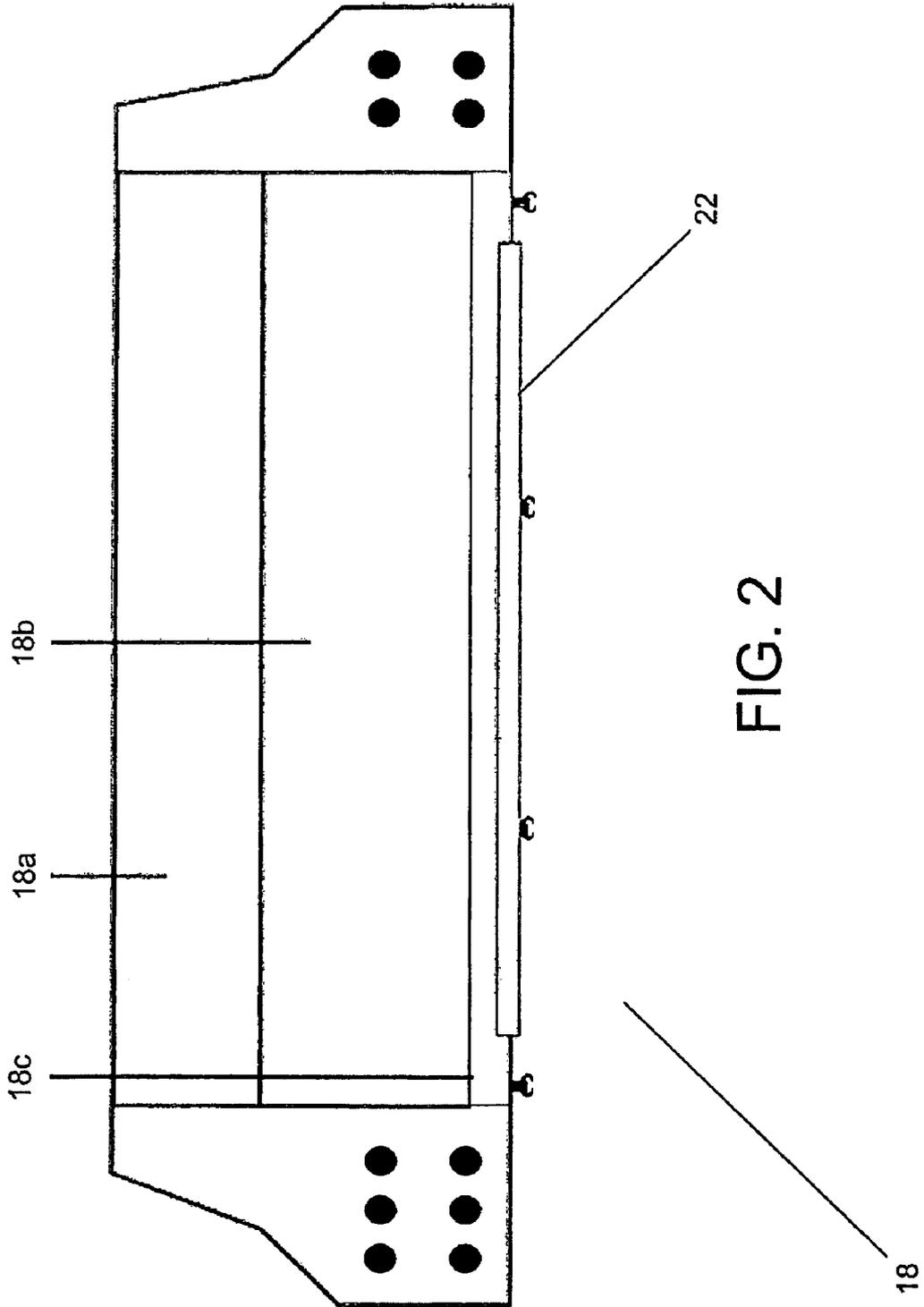


FIG. 1



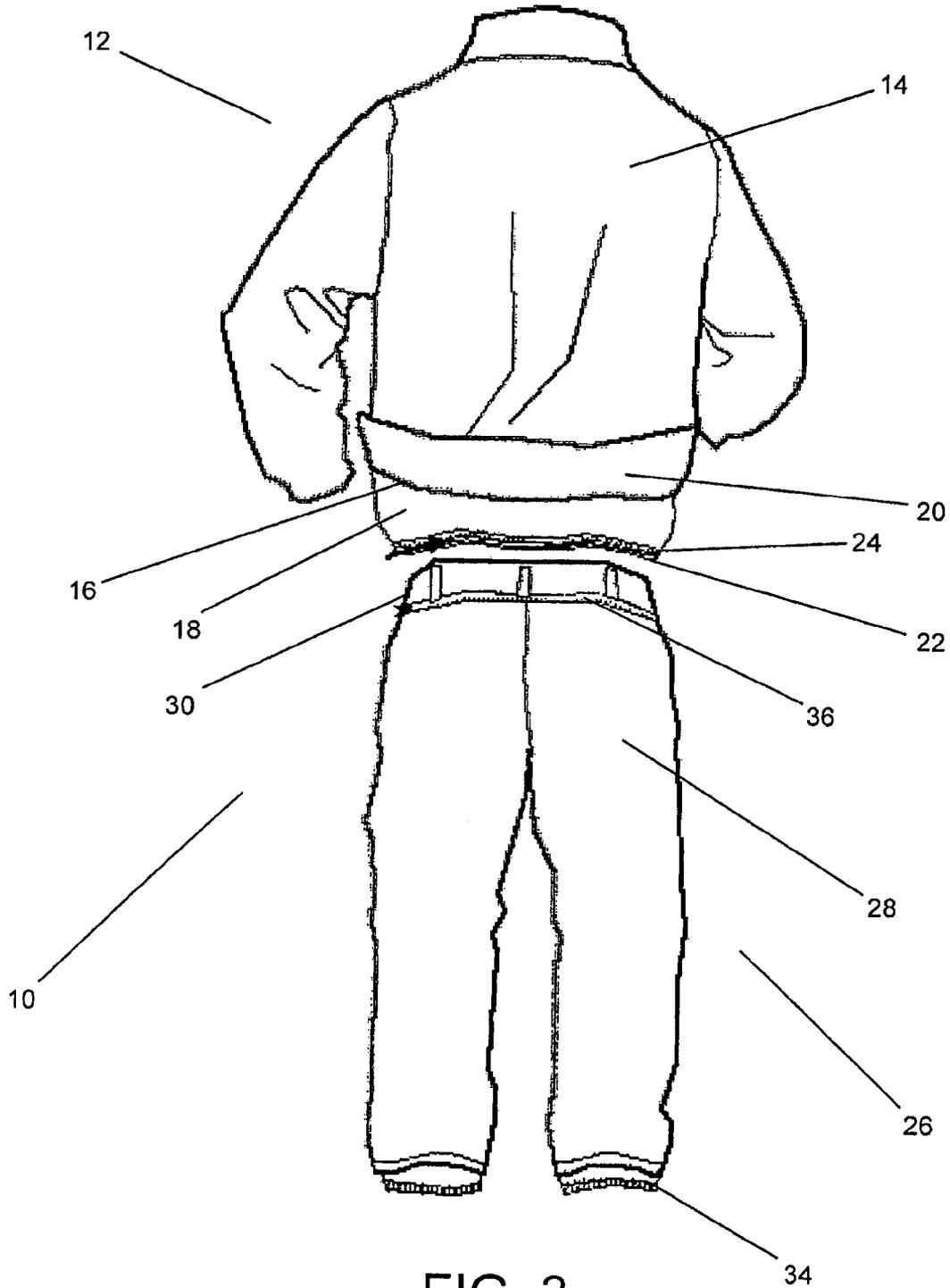


FIG. 3

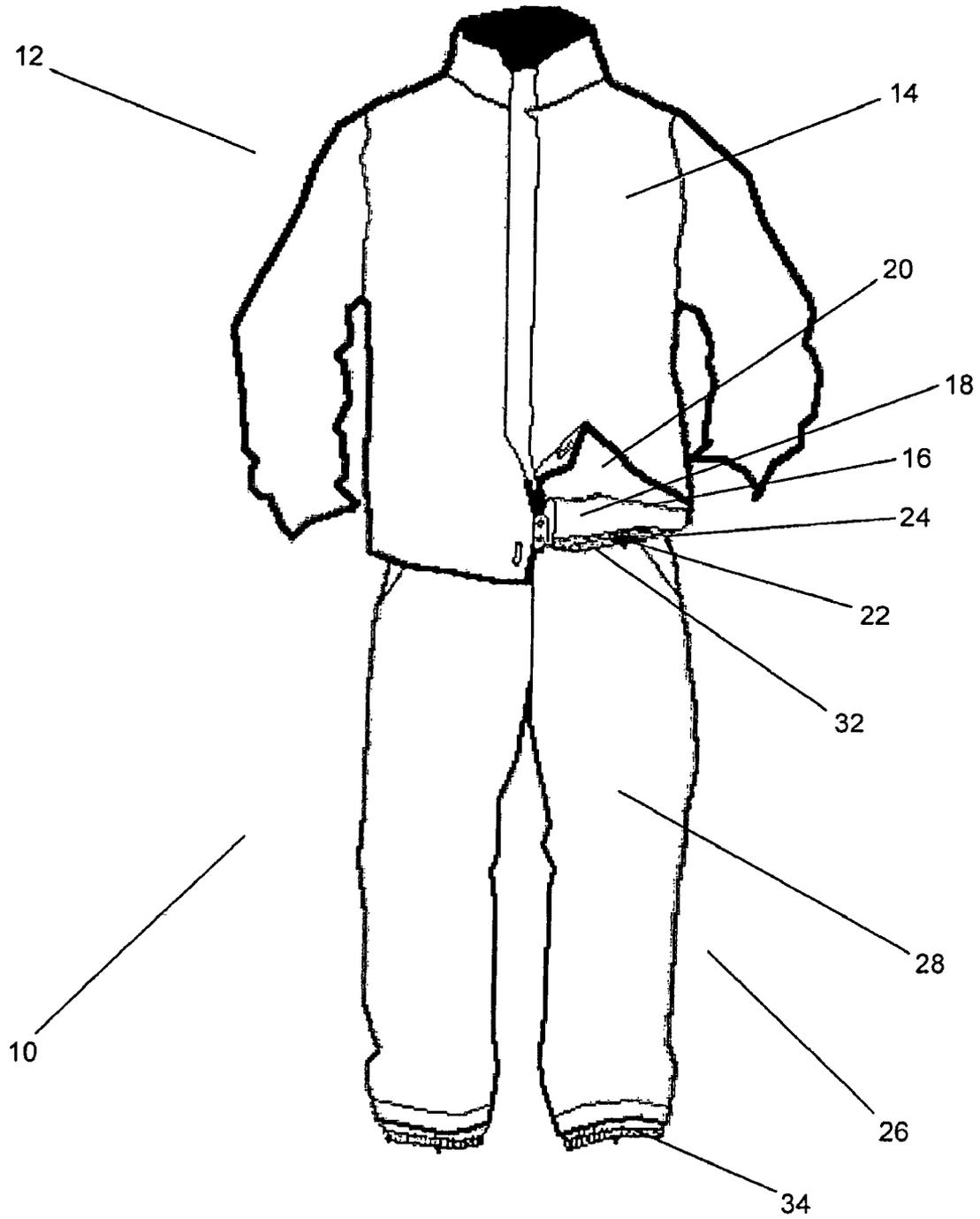


FIG. 4

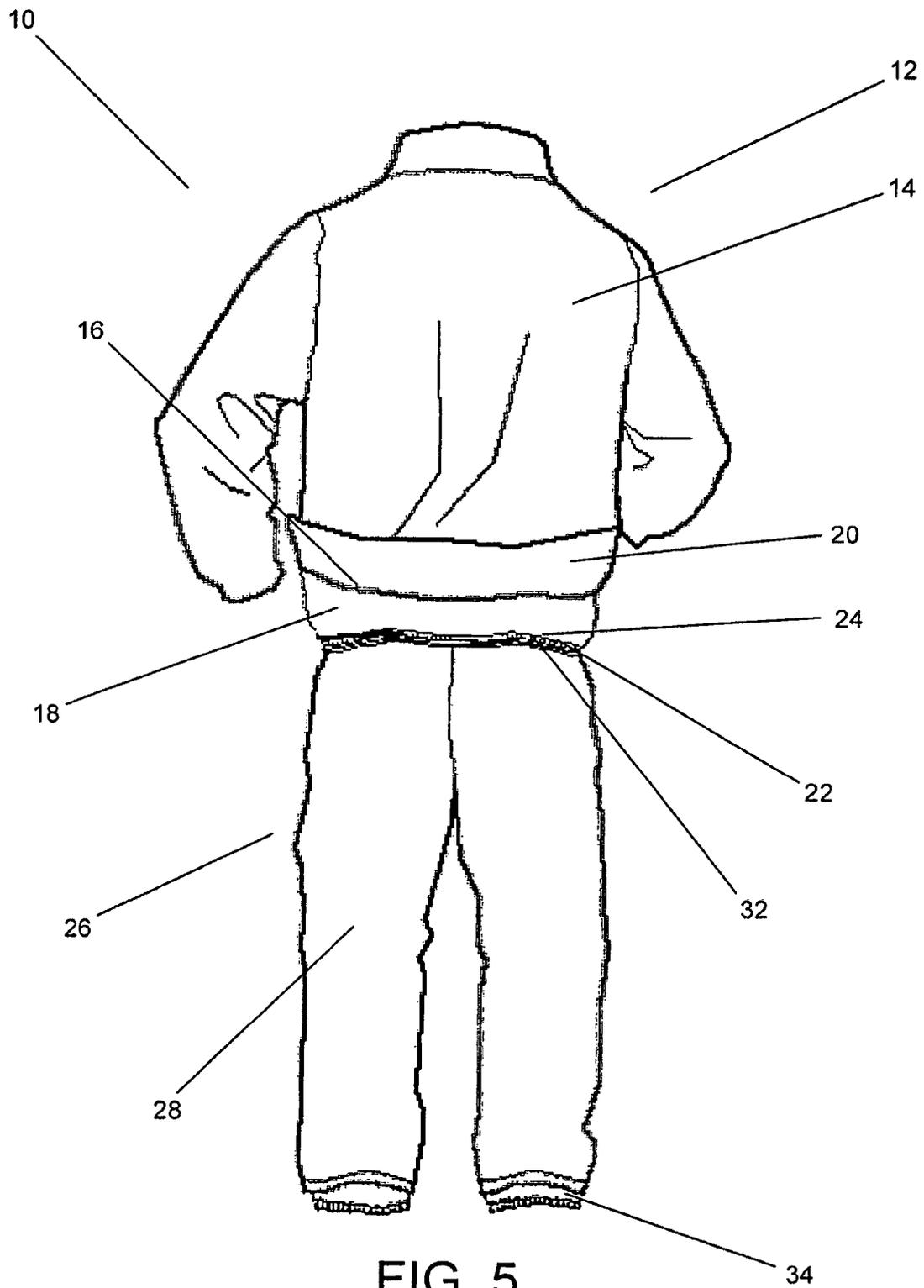


FIG. 5

POWDER SKIRT ZIPPER SYSTEM**CROSS-REFERENCE TO RELATED APPLICATION**

This application is a divisional of application Ser. No. 10/984,074, filed Nov. 8, 2004 now U.S. Pat.No. 7,404,214 and claims priority to U.S. provisional application No. 60/518,120, filed on Nov. 6, 2003, the contents of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

Numerous winter sports are performed outdoors in snow conditions. Skiing and snowboarding are examples of two such sports. Falling in snow is a hazard of many winter sports. Therefore, a variety of garments have been developed to keep participants as warm and dry as possible.

During a fall, snow will often work its way inside water-proof garments through openings in the garment. Where a separate jacket and trousers are worn, snow can often work its way inside the jacket through the opening in the base of the jacket. Snow can be prevented from finding its way inside a jacket by using an inner skirt of water resistant material inside and near the base of the jacket, referred to as a "powder skirt." The skirt is typically elasticized in order to hug the waist of the wearer and form a barrier extending from the trousers to the inside lining of the jacket.

SUMMARY OF THE INVENTION

A garment set is disclosed that includes a jacket and a pair of trousers, where the jacket includes a powder skirt that can attach to the trousers. In one aspect of the invention the jacket is attached to the trousers via a zipper, and the zipper is standardized so that a jacket in accordance with the present invention can be used in conjunction with a variety of different sized trousers. In another aspect, the mating portion of the zipper on the trousers can be at least partially concealed beneath a welt flap when not attached. One embodiment of the invention includes a water resistant jacket, an elasticized powder skirt having at least two edges, the first of which is attached to the water resistant jacket, at least one fastener connected to the second edge of the powder skirt, water resistant trousers including a waist opening and two leg openings and at least one corresponding mating fastener connected to the trousers. The fastener and the corresponding mating fastener are constructed to detachably fix the powder skirt to the water resistant trousers.

In a further embodiment, the fastener is a mating portion of a zipper, the corresponding mating fastener is a corresponding mating portion of a zipper and the mating portion of a zipper and the corresponding mating portion of a zipper are constructed to combine to form a zipper.

In another embodiment, the water resistant jacket includes an interior surface and an exterior surface and the first edge of the powder skirt is attached to the interior surface of the jacket.

In a further embodiment again, the first edge of the powder skirt is stitched to the interior surface of the jacket.

In yet another embodiment, the water resistant trousers include an interior surface and an exterior surface and the at least one corresponding mating fastener is attached to the exterior surface of the trousers.

In a still further embodiment, the corresponding mating fastener is a mating portion of a zipper that is permanently attached to the trousers.

In still another embodiment, the water resistant trousers include two powder skirts, each powder skirt is attached to the interior surface of the trousers and each powder skirt extends at least partially from one of the trouser leg openings.

In a still further embodiment again, the water resistant jacket and water resistant trousers are constructed from materials having water resistance and thermal insulation sufficient to perform activity in snow conditions.

In still yet another embodiment, the powder skirt is attached to the water resistant jacket and the trousers with sufficient strength to act as a barrier to water and snow in the event of a fall by the wearer in snow conditions.

Another aspect of the invention includes an interior surface and an exterior surface, an elasticized powder skirt having at least two edges, the first of which is attached to the jacket and at least one standard fastener connected to the powder skirt. In addition, the powder skirt can be attached to the interior surface of the jacket. Furthermore, the fastener can be a mating zipper portion of a standard length that is attached to the second edge of the powder skirt.

An additional further embodiment is constructed from at least one material having water resistance and thermal insulation sufficient for use in snow conditions.

Another aspect of the invention again includes a waist opening, two leg openings, an interior surface and an exterior surface and at least one fastener permanently attached to the trousers. The fastener is of a type and located to combine with corresponding fasteners on any of a number of different sized jackets. In addition, the fastener can be attached to the exterior surface of the trousers. Furthermore, the fastener can be a mating portion of a zipper of a predetermined standard length.

In another additional embodiment, the mating portion of a zipper is at least partially concealed beneath a welt flap.

A still further additional embodiment includes two powder skirts, where each powder skirt is attached to the interior surface of the trousers and each powder skirt is located at least partially within the trouser leg openings.

In another additional embodiment again, the trousers are constructed from a material having water resistance and thermal insulation sufficient for use in snow conditions.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front schematic view of a jacket and trousers in accordance with the present invention, where the jacket includes a powder skirt possessing a mating portion of a zipper and the trousers include a corresponding mating portion of the zipper;

FIG. 2 is a schematic view of materials that can be used in the construction of a powder skirt in accordance with the present invention;

FIG. 3 is a rear schematic view of a jacket and trousers in accordance with the present invention;

FIG. 4 is a front schematic view of the jacket and trousers in accordance with the present invention, where a portion of the jacket is raised to reveal the attachment in accordance with the present invention of the mating portion of a zipper on the powder skirt to the corresponding mating portion of a zipper on the trousers; and

FIG. 5 is a rear schematic view that shows a jacket and trousers in accordance with the present invention, where the jacket is raised to reveal the attachment in accordance with the present invention of the mating portion of the zipper on the powder skirt to the corresponding mating portion of the zipper on the trousers.

DETAILED DESCRIPTION OF THE INVENTION

Turning to the figures, a garment set **10** is illustrated that includes a water resistant jacket **12** and pair of trousers **26** that are capable of keeping a wearer warm and dry in hospitable snow conditions. The jacket includes a powder skirt **18** that can be fastened to the trousers. In one embodiment the powder skirt includes a mating portion of a zipper **22** as a fastener, and the trousers include the corresponding mating portion of the zipper **32** as a fastener. When the garment set is worn and the powder skirt is fastened to the trousers, the powder skirt extends from the exterior of the trousers **28** to the interior of the jacket **20**, which seals an opening between the jacket and the trousers that would otherwise exist. By sealing the opening, the powder skirt can create a barrier to rain and snow that remains intact during a fall by the wearer. In some instances, the mating zipper portions conform to predetermined specifications so that the zipper portions can be combined irrespective of the size of the jacket and trousers that form the garment set. In addition, the trousers can also include a welt flap **36** over the corresponding mating portion of the zipper to prevent injury when the corresponding mating portion of the zipper is unattached.

A garment set in accordance with the present invention is illustrated in FIG. 1. The garment set **10** includes a jacket **12**. The exterior of the jacket **14** is constructed from a water resistant material. One edge **16** of a powder skirt **18** is attached to the interior surface **20** of the jacket. The powder skirt extends some distance from the interior surface of the jacket and a mating portion of a zipper **22** is connected to the other edge **24** of the powder skirt. The garment set **10** also includes trousers **26**. The exterior **28** of the trousers is also constructed from a water resistant material. Attached near the waist **30** of the trousers is a corresponding mating portion of a zipper **32** that is designed to be combined with the mating portion of the zipper **22** connected to the powder skirt **18**.

Typically the powder skirt **18** is constructed from a water resistant material that can be elasticized. In several instances, the powder skirt is sewn to the interior surface of the jacket although in other cases the powder skirt can be attached via a zipper **161**, buttons, a hook and loop fastening material or other attachment means. In addition, the powder skirt may be attached to the bottom edge of the jacket, be integrated into the bottom of the jacket or attached to the outside of the jacket. In embodiments where the jacket includes a front zipper to facilitate entry of the jacket, a gap in the powder skirt is required. When worn, the gap can be dosed by attaching a portion of the powder skirt on either side of the gap to either a portion of the jacket on the other side of the gap and/or to a portion of the powder skirt on the other side of the gap. Attachment can be achieved using buttons, press studs, a zipper or a hook and loop fastening material.

The trousers **26** typically include a method of fitting the waist **30** of the trousers to the waist of the person wearing the trousers. When fitted, the waist **30** of the trousers **26** can prevent the trousers from falling down. In some examples of the invention, a bib and brace or suspenders are used to prevent the trousers from falling down. The trousers can also include powder skirts **34** inside the openings of each leg. In some instances of the invention, the corresponding mating portion of the zipper is at least partially concealed below a welt flap **36** to prevent the teeth of the zipper portion from causing injury when the corresponding mating portion is unattached.

An embodiment of a powder skirt in accordance with the present invention is illustrated in FIG. 2. The powder skirt **18** is constructed using a Nylon Spandex Knit Stretch Panel **18a**

sewn above a Nylon Taffeta Panel **18b** and Rubberized Elastic **18c** is sewn at the bottom hem of the Nylon Taffeta Panel. In one embodiment, the mating portion of the zipper **22** and the corresponding mating portion of the zipper **32** are constructed using a YKK #5 Coil Separating Zipper. Although in other embodiments, variations in the number of panels and other combinations of elasticized and non-elasticized materials can be used in the construction of the powder skirt **18** and other zippers can be used in the construction of the mating portion of the zipper **22** and the corresponding mating portion of the zipper **32**.

A rear view of the garment set **10** is shown in FIG. 3. The jacket **12** is raised to reveal the powder skirt **18** attached to the interior of the jacket **20**. The corresponding mating portion of the zipper **32** is completely concealed beneath the welt flap **36**.

A front view of the garment set **10**, where the powder skirt is attached to trousers in accordance with the present invention, is shown in FIG. 4. The powder skirt **18** of a jacket **12** is attached to trousers **26** by combining the mating portion of the zipper **22** with the corresponding mating portion of the zipper **32**. In embodiments where the powder skirt includes a band of elasticized material, some travel is accommodated to enable the jacket and the trousers an extent of independent movement. In embodiments that do not include elasticized material, upward movement of the jacket can cause the trousers to ride up in an uncomfortable manner. Typically, sufficient elastic travel is provided to minimize the extent to which the jacket can cause the trousers to ride up during activity or during a fall.

A rear view of the garment set **10**, where the powder skirt is attached to trousers in accordance with the present invention, is shown in FIG. 5. When the zipper portions are combined, the welt flap is concealed inside the powder skirt.

In some examples of the invention, standard mating portions of zippers and corresponding mating portions of zippers are used in the construction of jackets and trousers in accordance with the present invention. Providing a selection of different sized jackets and trousers can enable individuals to choose a garment set that is most appropriate for their body shape. The use of standardized zipper portions ensures that, irrespective of the size of jacket and trousers chosen, the powder skirt of the jacket can be attached to the trousers using the zipper portions. In addition, a person may combine various jackets of the same size with a particular pair of trousers and vice versa.

Although the foregoing embodiments are disclosed as typical, it would be understood that additional variations, substitutions and modifications can be made to the system, as disclosed, without departing from the scope of the invention. For example, press studs, hook and loop fastening materials, buttons, permanent attachment such as stitching, or any other fasteners could be used to secure a powder skirt to a pair of trousers in accordance with the present invention. In addition, other configurations of the invention can include a powder skirt attached to trousers that is attachable to a jacket or another powder skirt attached to a jacket. Accordingly, the scope of the invention should be determined not by the embodiments illustrated, but by the appended claims and their equivalents.

What is claimed is:

1. A winter sport garment set, comprising:
 - a water resistant jacket;
 - an elasticized powder skirt having an upper edge and a lower edge and comprising an elasticized panel;
 - a first mating portion of a zipper connected to the lower edge of the elasticized powder skirt;

5

a second mating portion of a zipper connected to the upper edge of the elasticized powder skirt;
 water resistant trousers including a waist opening and two leg openings;
 a first corresponding mating portion of a zipper stitched to the trousers; and
 a second corresponding mating portion of a zipper stitched to the water resistant jacket;
 wherein the first mating and corresponding mating portions of a zipper are constructed to detachably fix the elasticized powder skirt to the water resistant trousers;
 wherein the second mating and corresponding mating portions of a zipper are constructed to detachably fix the elasticized powder skirt to the interior surface of the water resistant jacket;
 wherein the water resistant trousers include two powder skirts, each powder skirt is attached to the interior surface of the trousers and each powder skirt is contained at least partially within one of the trouser leg openings;
 wherein the elasticized powder skirt further comprises:
 the elasticized panel being proximate the upper edge of the elasticized powder skirt;
 a panel of water resistant material attached to the elasticized panel along a seam that is located between the elasticized panel and the lower edge of the elasticized powder skirt; and
 a rubberized elastic panel is attached to the water resistant material along a seam that is located between the elasticized panel and the lower edge of the elasticized powder skirt.

2. The garment set of claim 1, wherein an edge of the elasticized panel forms the upper edge of the elasticized powder skirt.

3. The garment set of claim 1, wherein the upper edge of the elasticized powder skirt is substantially parallel to the lower edge.

4. The garment set of claim 3 wherein the lower edge of the elasticized powder skirt is longer than the upper edge of the elasticized powder skirt.

5. The garment set of claim 4 wherein the length of the first mating portion of a zipper is shorter than the length of the lower edge of the elasticized powder skirt.

6. The garment set of claim 1, wherein the trousers further comprise a welt flap having a first edge that is fixed to the exterior surface of the trousers between the first corresponding mating portion of a zipper and the waist opening, where the welt flap at least partially conceals the first corresponding mating portion of a zipper.

7. The garment set of claim 1, wherein the first mating and corresponding mating portions of a zipper conform to predetermined specifications so that the zipper portions can be combined irrespective of the size of the jacket and trousers.

8. The garment set of claim 1, wherein:
 the water resistant jacket includes an interior surface and an exterior surface; and
 the second corresponding mating portion of a zipper is stitched to the interior surface of the jacket.

9. The garment set of claim 1, wherein:
 the water resistant trousers include an interior surface and an exterior surface; and
 the first corresponding mating portion of a zipper is attached to the exterior surface of the trousers.

10. A winter sport garment set, comprising:
 a water resistant jacket;
 an elasticized powder skirt having an upper edge and a lower edge and comprising an elasticized panel;

6

a first mating portion of a zipper connected to the lower edge of the elasticized powder skirt;
 a second mating portion of a zipper connected to the upper edge of the elasticized powder skirt;
 water resistant trousers including a waist opening and two leg openings;
 a first corresponding mating portion of a zipper stitched to the trousers; and
 a second corresponding mating portion of a zipper stitched to the water resistant jacket;
 wherein the first mating and corresponding mating portions of a zipper are constructed to detachably fix the elasticized powder skirt to the water resistant trousers;
 wherein the second mating and corresponding mating portions of a zipper are constructed to detachably fix the elasticized powder skirt to the interior surface of the water resistant jacket;
 wherein the water resistant trousers include two powder skirts, each powder skirt is attached to the interior surface of the trousers and each powder skirt is contained at least partially within one of the trouser leg openings;
 wherein the elasticized powder skirt further comprises:
 a panel of water resistant material;
 wherein the elasticized panel is located within the elasticized powder skirt between the panel of water resistant material and the upper edge of the elasticized powder skirt.

11. The garment set of claim 10, wherein the elasticized panel and the water resistant panel are attached along a seam.

12. The garment set of claim 10, wherein an edge of the elasticized panel forms the upper edge of the elasticized powder skirt.

13. The garment set of claim 10, wherein an edge of the elasticized panel is attached along a seam to a panel of material, where an edge of the panel of material forms the upper edge of the elasticized powder skirt.

14. The garment set of claim 10, wherein the elasticized powder skirt further comprises:
 a rubberized elastic panel;
 wherein the rubberized elastic panel is attached to the panel of water resistant material and an edge of the rubberized elastic panel forms the lower edge of the elasticized powder skirt.

15. The garment set of claim 10, wherein the length of the first mating portion of a zipper is shorter than the length of the upper edge of the elasticized powder skirt.

16. A winter sport garment set, comprising:
 a water resistant jacket;
 an elasticized powder skirt having a first edge and a second edge and comprising an elasticized panel;
 a first mating portion of a zipper attached to the second edge of the elasticized powder skirt;
 water resistant trousers including a waist opening and two leg openings; and
 a first corresponding mating portion of a zipper attached to the trousers;
 wherein the first mating and corresponding mating portions of a zipper are constructed to detachably attach the elasticized powder skirt to the water resistant trousers;
 wherein the elasticized powder skirt is attached to the interior surface of the water resistant jacket;
 wherein the water resistant trousers include two powder skirts, each powder skirt is attached to the interior surface of the trousers and each powder skirt is contained at least partially within one of the trouser leg openings;
 wherein the elasticized powder skirt further comprises:
 a panel of water resistant material;

7

wherein the elasticized panel is located within the elasticized powder skirt between the panel of water resistant material and the first edge of the elasticized powder skirt.

17. The garment set of claim 16, wherein the elasticized panel and the water resistant panel are attached along a seam.

18. The garment set of claim 17, wherein an edge of the elasticized panel forms the first edge of the elasticized powder skirt.

19. The garment set of claim 17, wherein an edge of the elasticized panel is attached along a seam to a panel of material, where an edge of the panel of material forms the first edge of the elasticized powder skirt.

20. The garment set of claim 16, wherein the elasticized powder skirt further comprises:
a rubberized elastic panel;

wherein the rubberized elastic panel is attached to the panel of water resistant material and an edge of the rubberized elastic panel forms the second edge of the elasticized powder skirt.

21. The garment set of claim 17, wherein the first edge of the elasticized powder skirt is substantially parallel to the second edge.

8

22. The garment set of claim 17, wherein the length of the first mating portion of a zipper is shorter than the length of the first edge of the elasticized powder skirt.

23. The garment set of claim 16, wherein the elasticized powder skirt is removably attached to the interior of the water resistant jacket via a second mating portion of a zipper attached to the first edge of the powder skirt and a second corresponding mating portion of a zipper attached to the interior of the water resistant jacket.

24. The garment set of claim 16, wherein the trousers further comprise a welt flap having a first edge that is fixed to the exterior surface of the trousers between the first corresponding mating portion of a zipper and the waist opening, where the welt flap at least partially conceals the first corresponding mating portion of a zipper.

25. The garment set of claim 16, wherein the first mating and corresponding mating portions of a zipper conform to predetermined specifications so that the zipper portions can be combined irrespective of the size of the jacket and trousers.

* * * * *