June 4, 1957 M. E. BUTTERS 2,794,186

WEARABLE PROTECTIVE BODY-COVERING STRUCTURE

Filed Jan. 13, 1951 3 Sheets-Sheet 1

Fig. 1

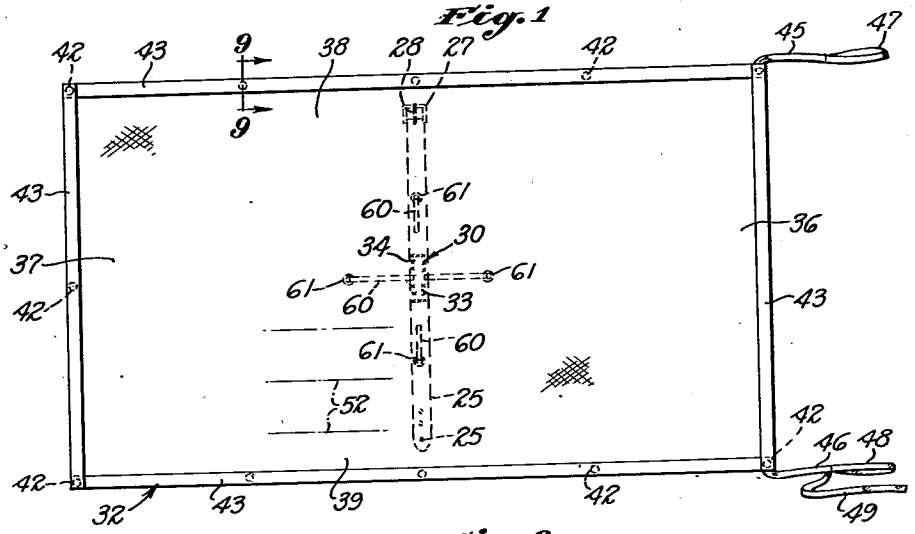


Fig. 2

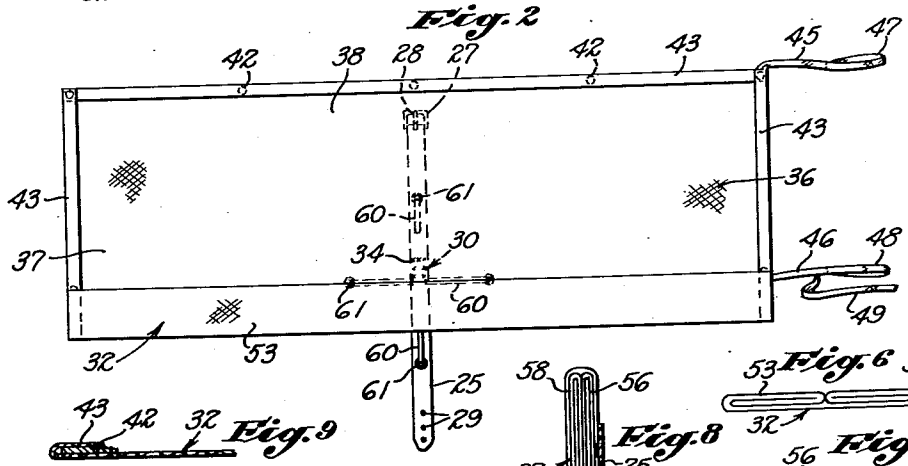


Fig. 9

Fig. 8

Fig. 6

Fig. 7



Fig. 3

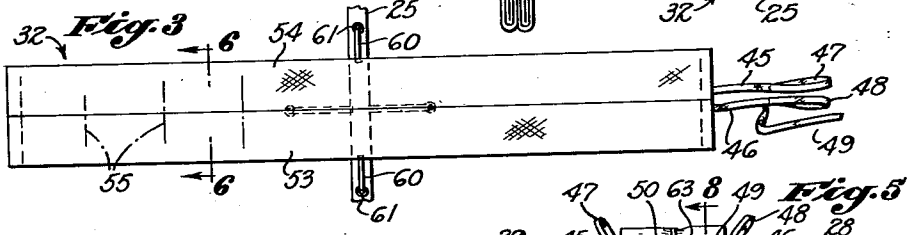


Fig. 5

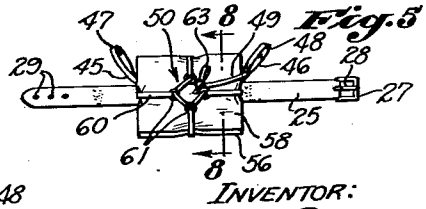
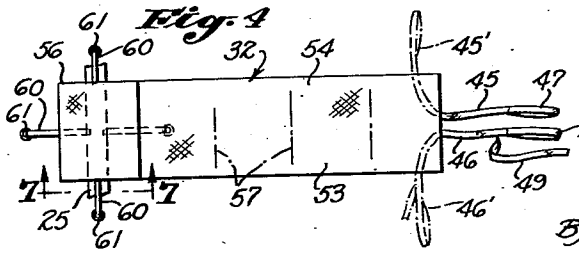


Fig. 4



INVENTOR:
MELISSA ELIZABETH BUTTERS
By Her ATTORNEYS
HARRIS, KIECH, FOSTER & HARRIS
By Clarence F. Kiech

June 4, 1957 M. E. BUTTERS 2,794,186

WEARABLE PROTECTIVE BODY-COVERING STRUCTURE

Filed Jan. 13, 1951 3 Sheets-Sheet 2

Fig. 10

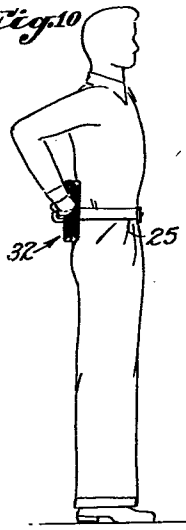


Fig. 11

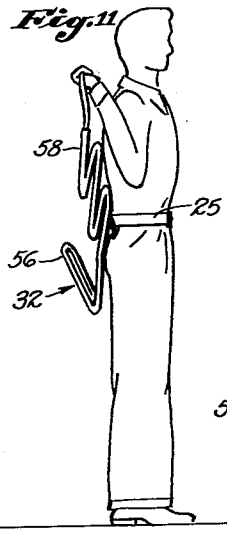


Fig. 12

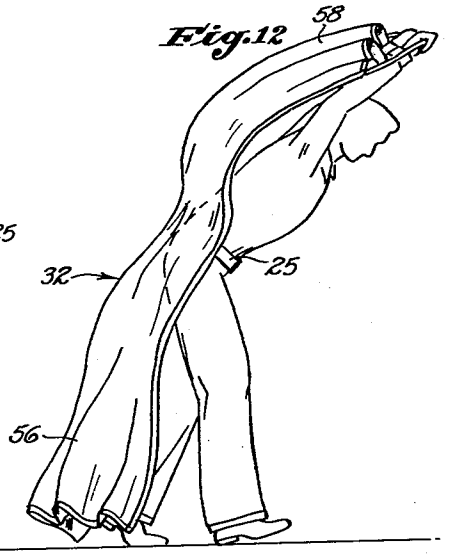


Fig. 13

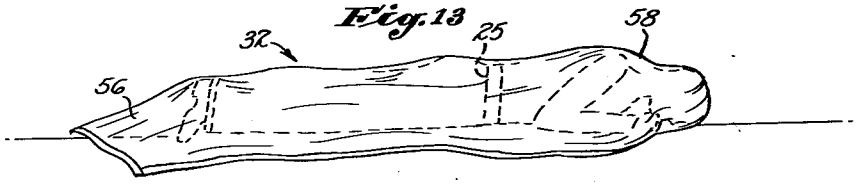


Fig. 14

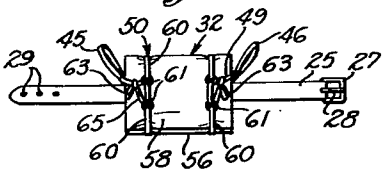


Fig. 15

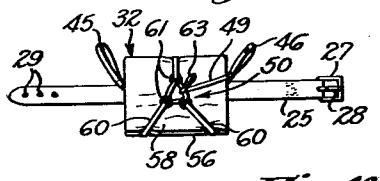


Fig. 16

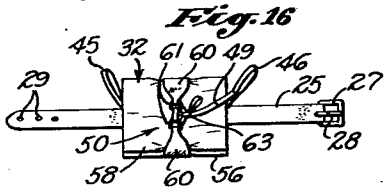


Fig. 17

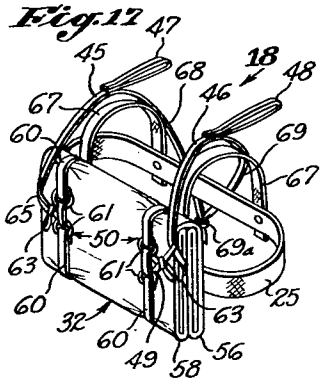
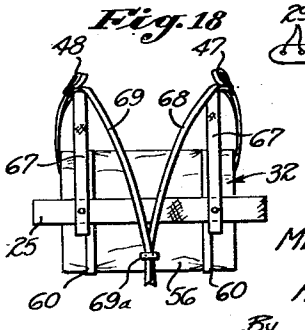


Fig. 18



INVENTOR:
MELISSA ELIZABETH BUTTERS
By Her ATTORNEYS
HARRIS, KIECH, FOSTER & HARRIS
By Thomas F. Kiech

June 4, 1957 M. E. BUTTERS 2,794,186

WEARABLE PROTECTIVE BODY-COVERING STRUCTURE

Filed Jan. 13, 1951 3 Sheets-Sheet 3

Fig. 19

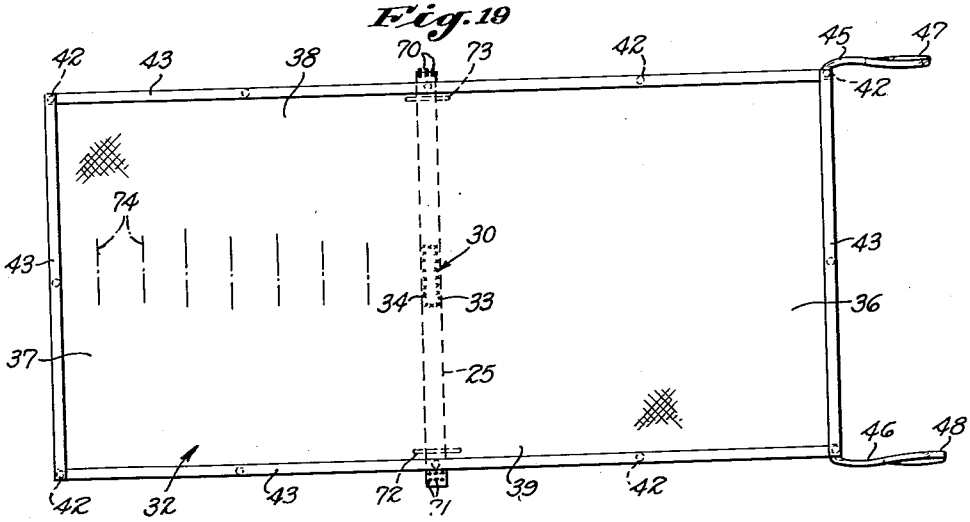


Fig. 20

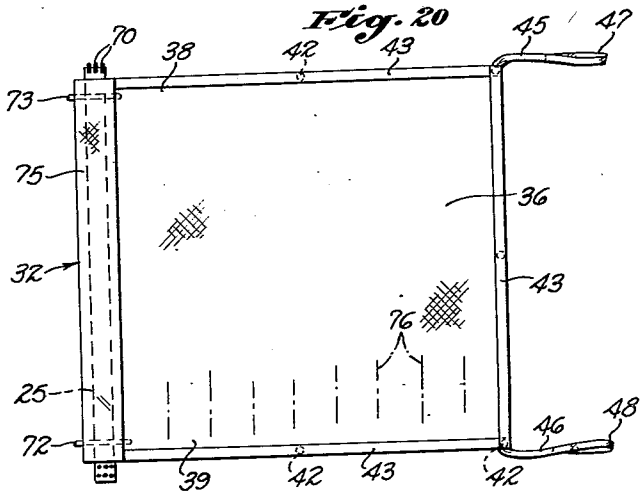


Fig. 22

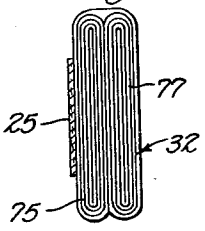
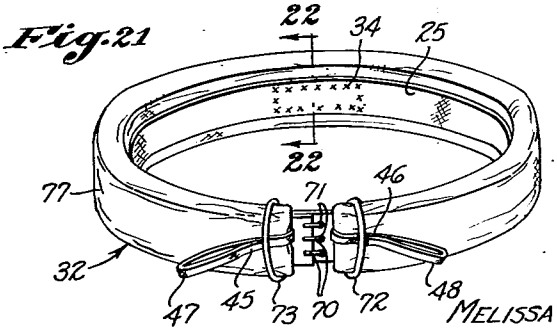


Fig. 21



INVENTOR:
MELISSA ELIZABETH BUTTERS
By Her ATTORNEYS
HARRIS, KIECH, FOSTER & HARRIS
By Terence F. Kiech

United States Patent Office 2,794,186 Patented June 4, 1957

2,794,186

WEARABLE PROTECTIVE BODY-COVERING STRUCTURE

Melissa Elizabeth Butters, San Marino, Calif.

Application January 13, 1951, Serial No. 205,938

7 Claims. (Cl. 2—1)

My invention relates to a wearable protective body-covering structure which can be quickly released from a folded condition in which it is normally worn. More particularly, it relates to a wearable body-covering structure which can be released to cover the entire body of the wearer before or during falling to a substantially prone position to protect the wearer against burning from infrared or heat rays and which will also give some degree of protection against burning by direct contact with flames.

Extremely intense radiant heat, whether from nearby flames or from an atomic explosion, may cause serious burning or death to the lightly-clothed or even a fully-clothed person, depending upon the intensity of the incident radiation. There is a distinct need for a protective covering which can be thrown over the body in protective relationship, yet it is usually not feasible to carry such a protective covering or have such protective coverings stored near all positions which a person is likely to occupy in the daily routine of life. The present invention relates to a foldable and wearable unit that can be worn by the person without discomfort or inconvenience and yet which is instantaneously available for use should the need arise.

It is an important object of the present invention to provide a protective body-covering structure which can be worn in a compact, folded condition and which can be unfolded quickly.

Another object of the invention is to provide a wearable unit including a body-covering member secured locally to a body-encircling member, for example, a belt. A further object is to use a body-covering member which is foldable into compact form while secured to such body-encircling member, being secured in such relationship that the body-encircling member will position the body-covering member when unfolded.

A further object is to provide a body-covering member formed of heat-reflective material and of such size as to cover the entire body of the wearer when in a substantially prone position. By the term "substantially prone position," I include not only a completely prone position but also a partly-prone or crouching position.

If the folded body-covering member is connected to the body-encircling member at the back, I have found that a simple arm movement can be made to unfold the body-covering member to cover the entire rear portion of the body of the wearer before falling to a substantially prone position. In the present invention this is true to such an extent that the protective cover is released and initially positioned in protective relationship merely by actuating a quick-release means. The normal reaction to present or expected heat rays is to fall to a prone position with the face downward and with the face tucked between the arms or hands. In my invention the protective cover structure can be released and moved to a protective position preparatory to or as a part of this falling to a substantially prone position.

Another object of the invention is to provide a cover structure which is secured only locally to a body-encircling member to leave side portions and end portions beyond the point of local connection and which are of sufficient area to cover all exposed portions of a person in a substantially prone position. A further object of the invention is to provide a wearable protective body-covering structure which unfolds naturally into body-covering position preparatory to or during falling to a substantially prone position.

Another object of the invention is to provide novel forms of quick-release means for releasing a folded body-covering structure. Another object is to provide an automatic release for such a means which comes into operation when graspable portions of the cover structure are grasped by the hands preparatory to unfolding. A further object of the invention is to provide a wearable body-covering structure in which the release and the unfolding of the body-covering member are effected by a single, simple, manual operation.

Further objects of the invention lie in the manner of folding a body-covering member relative to a connected body-encircling member or attachment member. Other objects lie in the particular forms of quick-release means for the folded body-covering member and suggested in this application.

Still a further object of the invention is to provide a body-covering member connected to a body-encircling member and having upper and lower end portions respectively of such length as to cover the upper and lower portions of the body when in a substantially prone position. Another object is to provide such a structure in which the upper end portion is of such length as to encompass the exposed portions of the head of the wearer in a substantially prone position. A further object is to weight certain portions of the body-covering member, particularly at the edges and especially in the lower end portion, so that the body-covering member will be in contact with the ground or floor at positions around the substantially prone wearer.

Further objects and advantages of the invention will be evident from the following description of exemplary embodiments, taken in connection with the accompanying drawings.

Referring to the drawings:

Fig. 1 is a plan view of one embodiment of the invention spread on a flat surface preparatory to folding;

Fig. 2 is a similar plan view showing one side portion folded;

Fig. 3 is a similar view showing both side portions folded;

Fig. 4 shows the lower end portion folded and suggests the fold lines for the upper end portion;

Fig. 5 is an elevational view of this embodiment of the invention when completely folded and retained in folded form by the quick-release means;

Figs. 6, 7, and 8 are diagrammatic sectional views illustrating the manner of folding, being taken along corresponding lines of Figs. 3, 4 and 5, respectively;

Fig. 9 is a fragmentary sectional view taken along the line 9—9 of Fig. 1;

Fig. 10 shows this embodiment with the hands of the wearer in an initial position preparatory to release;

Fig. 11 is similar to Fig. 10 but shows the invention immediately after release;

Fig. 12 shows the invention substantially completely released and the wearer bending toward a prone position;

Fig. 13 shows the wearer in prone position with the body-covering member in completely protective relationship;

Figs. 14, 15 and 16 illustrate modified quick-release means;

Fig. 17 illustrates a halter-type device;

Fig. 18 is a front view of the device of Fig. 17 taken in the direction of the arrow 18 thereof;

Fig. 19 illustrates an alternative form of the device spread on a flat surface preparatory to folding;

Fig. 20 illustrates the lower end portion in folded position and suggests the fold lines for the upper end portion;

Fig. 21 is a perspective view of this embodiment of the invention when completely folded and as worn; and

Fig. 22 is a diagrammatic sectional view taken along the line 22—22 of Fig. 21 illustrating the manner of folding.

Referring particularly to Figs. 1–5, this embodiment of the invention includes an attachment or body-encircling member **25** exemplified as a belt and including means for connecting same to the body of the wearer. This means may include any conventional fastening means whereby the ends of the body-encircling member may be adjustably secured together, this means being exemplified in Figs. 1–5 as including a conventional belt buckle **27** with a tongue **28** selectively insertable in one of a plurality of openings **29**. This body-encircling member **25** has a small, limited-area, intermediate portion **30** disposed between the ends of the members for local connection to a body-covering member indicated generally by the numeral **32**.

This body-covering member **32** is preferably made of a flexible material of high-heat reflectivity. It may be made of conventional white duck material, sometimes coated to improve heat reflectivity, or it may be any other material, preferably of light color, which will give good protection to the wearer against intense infrared rays. In giving protection against burns from nearby flames, this material may be flame-treated in any known way or it may contain or be made of a noninflammable material such as asbestos or mineral fibers. Conventionally, this material is in the form of a fabric, although it may be a continuous sheet of heat-reflective and flexible plastic of the thermo-setting, thermo-plastic or other type.

The body-covering member **32** also provides a small, limited-area, intermediate portion **33** overlying the intermediate portion **30** of the body-encircling member, these members being secured together exclusively in such intermediate portions as by strong stitching **34** or any suitable detachable means such as a snap or clip means which will not separate during use of the device but which will permit interchange of body-encircling members of different size.

If the body-encircling member **25** is a belt, as is contemplated in this embodiment of the invention, the body-covering member **32** will provide an upper end portion **36** and a lower end portion **37** lying respectively above and below the zone of local connection formed by the intermediate portions **30** and **33**. Likewise, the body-covering member **32** will provide side portions **38** and **39** respectively on opposite sides of such zone of local connection of the body-encircling and body-covering members. The portions **36–39**, inclusive, represent unsupported portions with respect to the body-encircling member **25**. For example, any of these portions can be lifted from the position shown in Fig. 1 until restrained by the weight of the body-encircling member **25**.

As will be later described, the lower end portion **37** should drop from folded form to cover the lower portion of the wearer, this dropping taking place when the upper end portion **36** is unfolded to be drawn over and to cover the upper portion of the body of the wearer. To facilitate such dropping of the lower end portion **37** into correct position, I prefer to weight this end portion, as by sewing weights **42** at spaced intervals in a seam **43** which preferably extends completely around the body-covering member **32**. Weighting of the edges of the body-covering member **32** is also desirable for holding the edges in contact with the ground or floor when the wearer is in a substantially prone position, suggested in Fig. 13. The weights **42** automatically serve this purpose, and it is also desirable to dispose weights **42** along the sides of the upper end portion **36** for this purpose.

The upper end portion **36** preferably provides spaced graspable means which can be respectively grasped by the hands of the wearer even when the body-covering member is folded. Hand grips **45** and **46** are provided for this purpose and may be formed of lengths of cloth tape with ends respectively sewed to the corners of the upper end portion **36**. The free end of the hand grip **45** is preferably looped back upon itself to form a loop **47**. The free end of the hand grip **46** similarly forms a loop **48** and extends therebeyond to form a tie portion **49** forming a part of a quick-release means comprising a releasable means **50** (Fig. 5) for holding the body-covering member, when folded, adjacent the body-encircling member **25**.

The preferred method of folding the body-covering member of Fig. 1 is illustrated in Figs. 2–8. The side portion **39** is initially folded longitudinally along fold lines **52** into the position shown in Fig. 2. The side portion **38** is likewise folded longitudinally, producing two longitudinal roll-like elements **53** and **54** lying adjacent each other and preferably in side-by-side relationship. Here and elsewhere in the specification and claims the words "fold," "folded" or "folding" are used in a sense to include "roll," "rolled" and "rolling"; also "pleat," "pleated" and "pleating." For example, it will be quite apparent that the side portion **39** can be rolled loosely or relatively tightly from the edge thereof into the position shown in Fig. 3, or that it can be pleated along the fold lines **52** without departing from the spirit of the invention. To insure compactness, I prefer a repeated fold or a loose roll as suggested in Figs. 3 and 6.

When in the intermediate position shown in Fig. 3, the hand grips **45** and **46** preferably extend from the upper end of the unit, as suggested in Fig. 3. Fig. 6 shows the preferred pattern of folding.

The roll-like elements **53** and **54** are then laterally or transversely folded. Preferably, the lower ends of these roll-like elements are folded along fold lines **55** into a pack **56** of a pattern shown in Fig. 8. The unit will at this time be of a configuration shown in Fig. 4, the pack **56** preferably overlying the body-encircling member **25**. The upper sections of the roll-like elements **53** and **54** are then folded along fold lines **57**, starting at the extreme upper end, to form a pack **58** (Fig. 8) which preferably directly overlies the pack **56** and from the sides of which the hand grips **45** and **46** extend as suggested in Fig. 5. This is made possible by swinging the hand grips into their dotted line positions **45'** and **46'** of Fig. 4 before starting this folding operation. While I prefer that the packs **56** and **58** be in superimposed position relative to the body-encircling member **25**, it is within the contemplation of the invention that the folds be made in any way to dispose the resulting packs **56** and **58** in adjacent or closely adjacent position.

Any suitable type of releasing means **50** may be used to releasably hold the folded body-covering member in position adjacent the body-encircling member **25**. This releasable means should be of the quick-release type and preferably should be operatively connected to the graspable means formed by the hand grips **45** and **46**. As shown in Figs. 1–5, the releasable means **50** includes flexible holding members **60** with their inner ends sewed or otherwise secured to the body-encircling member near the intermediate portion **30** thereof. The outer ends of these holding members respectively carry rings **61**. The tie portion **49** of the hand grip **46** is passed through these rings **61** in suitable sequence and tied upon itself to form

a releasable half-bow **63**. Preparatory to this tying, the ring-linking loop of the tie portion **49** is pulled tight so as to draw the holding members **60** snugly around the pack. The half-bow **63** is of the type in which the loop is made of that part of the tie portion **49** closest to the loop **48**. In other words, the tie portion **49** is so tied upon itself that a slight pull on the loop **48** will untie the half-bow **63**, permitting the tie portion to slip from the rings **61** and release them. The normal tension in the holding members **60** will draw the rings away from each other as soon as the bow is untied, thus completely releasing the pack.

It will be recognized that any outward pull on the hand grips **45** and **46** will start to unfold the pack **58** from an inner portion thereof. At the same time, any release or unfolding of this pack **58** will release the pack **56** which will tend to drop and unfold. The sideward unfolding of the upper end portion **36** due to a sideward pulling of the hand grips **45** and **46** will cause the entire body-covering member to unfold.

The unit thus far described is normally worn about the waist, with the pack at the small of the back, as suggested in Fig. 10. In this position, the pack offers no impediment to normal body movement and, in fact, acts as a cushion for the small of the back when the wearer is seated.

Upon the first warning of impending danger, the wearer moves both arms backward, as suggested in Fig. 10, and grasps the loops **47** and **48**. The hands are then quickly moved outwardly and rearwardly and the elbows bent into an intermediate position suggested in Fig. 11. This unties the half-bow **63** and releases the pack. The lower portion starts to unfold, as suggested in Fig. 11, and the upper portion starts to unfold both laterally and longitudinally because the hands are then rather widely spaced at a position opposite the shoulders, the forearms being upright.

The pack is preferably released when the wearer is upright or during falling to a substantially prone position. In normal use the action of pulling on the hand grips **45** and **46** and the raising of the arms is a natural one preparatory to falling face-down on the ground or floor. Fig. 12 suggests an intermediate body position preparatory to falling in a prone position and shows the further unfolding which takes place. Fig. 13 shows the wearer in prone position with the body-covering member **32** in protective position. The upper end portion **36** is of such length as to completely cover the head of the wearer, and this end portion is drawn about the head in the normal act of bending the arms until the hands are near the head, as suggested in Fig. 13. As the hands are moved toward the sides of the head, in normal face-protective relationship, the upper end portion **36** is thus drawn completely over the head, depending upon the length of the end portion **36**. The hem thereof may be at about eye or nose level or even therebelow when drawn about the head as suggested in Fig. 13.

While Fig. 13 shows the wearer in a prone position, equal protection from heat rays will be afforded if a semi-prone position is assumed. For example, if the weight of the upper portion of the body is carried on the elbows, the hands will still be in a position to draw the upper end portion **36** over the head and arched back of the wearer. Likewise, if the knees are bent to a completely crouched position, the lower end portion **37** will still cover the lower portion of the body. In all instances, the weighted edges of the body-covering member will lie close to the ground. The action is such that this will be true even though the body-covering member is not weighted at its edges or if weights are used only in the lower hem to facilitate the quick unfolding of the lower end portion **37**.

Fig. 14 illustrates an alternative releasable means **50**. Here the flexible holding members **60** are four in number but are secured to the body-encircling member **25** in parallel relationship. Two of the members **60** loop over and down the pack while the other two loop under and up the pack. Here the rings **61** of paired adjacent members **60** are releasably linked. Thus, the tie portion **49** is tied around the loops at one side of the pack while a corresponding tie portion **65**, connected to the hand grip **45**, ties the rings at the other side of the pack together. Here each of the hand grips **45** and **46** is operatively connected to the releasable means **50**.

In Fig. 15 only three of the flexible holding members **60** are used, being arranged in a substantially triangular pattern when tied by the tie portion **49** which is here connected to one of the hand grips.

Fig. 16 illustrates a modified releasable means including two of the flexible holding members **60**, preferably formed as rather wide bands and which loop around the upper and lower portions of the pack. In this embodiment, the tie portion **49** interconnects the two rings **61**. Here, as also in Figs. 14 and 15, the tie portions are tied into half-bows which are easily releasable upon a slight pull of the connected hand grip. In all of the embodiments, it is preferable that the tie portion **49** be made of a smooth material so that it will not bind when being untied and so that it will slip freely through the rings **61**.

Figs. 17 and 18 disclose an alternative embodiment in which the body-encircling member **25** is adapted to surround the chest, being held in place by shoulder straps **67**. In this embodiment, the pack is shown folded as in Fig. 14 but the hand grips **45** and **46** carry the loops **47** and **48** at shoulder level and provide end portions **68** and **69** which can extend from the shoulders downwardly and forwardly to be adjustably tied in front of or below the neck of the wearer. As suggested in Fig. 18, these end portions **68** and **69** may extend through a ring **69a** which can be raised therealong to any desired position, serving both utilitarian and decorative functions. As in Fig. 14, the tie portions **49** and **65** respectively interconnect vertically paired rings **61**. This embodiment is particularly suited for small children. It has the additional advantage that the loops **47** and **48** are in a readily graspable position.

Figs. 19–21 illustrate a further embodiment as concerns the methods of folding and wearing the invention. Fig. 19 shows the body-covering member **32** spread out on a flat surface preparatory to folding. The body-encircling member **25** is shown as a belt having a plurality of hooks **70** at one end adapted to be inserted in openings **71** at the other end. Several series of openings **71** are provided to permit adjustment. Additionally, the body-encircling member **25** shown has included two flattened or oblong rings **72** and **73** which can slide freely therealong.

In this embodiment, the lower end portion **37** is folded laterally along fold lines **74**, starting with the extreme end, to produce a roll-like element **75** of a pattern suggested in Fig. 22. The upper end portion **36** is then folded along lateral fold lines **76**, keeping the hand grips **45** and **46** exposed, to form a roll-like element **77**. The roll-like elements **75** and **77** will lie adjacent the body-encircling member **25** and preferably in superimposed position relative to each other.

When the body-encircling member **25** is fastened around the waist of the wearer, the roll-like elements **75** and **77** will assume positions shown in Fig. 21 with their ends facing each other. The flattened or elongated rings **72** and **73** may be moved toward each other and then away from each other after the respective ends of the roll-like elements have been placed therein. The hand grips **45** and **46** are laced through the rings **73** and **72** respectively to assume positions shown in Fig. 21.

In this embodiment ,the hand grips **45** and **46** will be carried at the front of the wearer. By grasping them with the respective hands and pulling them forwardly, the rings **72** and **73** will be displaced toward each other,

either sliding along the body-encircling member or pivoting relative thereto, to release the ends of the roll-like elements **75** and **77**. If the hand grips **45** and **46** are pulled slidewardly and away from each other, the ends of the roll-like elements **75** and **77** will be drawn from the respective rings. In either event, the hands are moved outwardly to arch the roll-like elements around the back, the hands being then elevated to an above-head position. The hand grips **45** and **46** will become twisted during the unfolding of the upper end portion **36**, depending upon the number of folds, but the flexible material of which they are made will permit this twisting.

With this embodiment, as with those heretofore described, other methods of folding the body-covering member may be employed. The embodiment of Figs. 19–21 may, for example, be folded pleat-like starting near the body-encircling member, and the term "roll-like element" includes the device when thus folded.

In the embodiment of Figs. 19–21, it is usually preferable that the roll-like element **77** formed of the upper end portion **36** should overlie the roll-like element **75** which when released forms the lower end portion **37**. With the described differences, this embodiment can be very similar to that shown in Fig. 1 except that the tie portion **49** need not be used. The rings **72** and **73** function as the releasable means and are operatively connected to the hand grips so that a single motion effects the release and starts the unfolding operation.

Other embodiments of the invention will be suggested to those skilled in the art from the examples herein given. Thus it will be recognized that various methods of folding can be employed and that the hand grips **45** and **46** may be of various forms and disposed in various positions convenient to grasping. The size of the various members may be adapted to the size of the wearer but this is not critical. If, for example, the body-covering member **32** is made sufficiently large to cover the body of a large adult, it will equally well cover the body of a smaller person. Generally, however, the length of the upper end portion **36** is desirably adjusted to the size of the wearer if it is desired that this end portion be drawn snugly about the head when in a prone position.

Various changes and modifications can be made without departing from the spirit of the invention as defined in the appended claims.

I claim as my invention:

1. In a wearable protective cover structure which can be quickly released from folded position to cover the body of the wearer in the act of falling to a substantially prone position to protect the wearer against intense radiation, the combination of: a belt having a small intermediate portion at the back of the wearer; a body-covering member formed of foldable heat-reflective material and providing a small intermediate portion between the sides thereof and between the ends thereof, the latter intermediate portion overlying the intermediate portion of said belt; means for connecting said body-covering member to said belt exclusively in said overlying portion, said last-named means including connection means for connecting said intermediate portions together to provide end portions of said body-covering member free of permanent connection to said belt and respectively of a length to cover the upper and lower portions of the body of the wearer, said end portions being respectively folded into compact folded portions adjacent each other and adjacent said belt; a plurality of flexible members secured to said belt, and providing end portions, each flexible member at least partially encompassing said folded portions; and releasable means for connecting and simultaneously releasing said end portions of said flexible members.

2. A wearable protective cover structure as defined in claim 1 in which one of said end portions of said body-covering member provides spaced graspable means, said one end portion being folded to expose said graspable means for respective grasping by the hands of the wearer to pull said one portion over the head of the wearer, at least one of said graspable means being operatively connected to said releasable connecting means.

3. A wearable protective cover structure for covering the body of the wearer against nuclear heat radiation preparatory to falling to and when in a substantially prone position, said wearable protective cover structure including: a body-encircling member providing a small intermediate portion at the back of the wearer; a body-covering member of heat-reflective material providing a small intermediate portion connected to said portion of said body-encircling member and forming the sole such connection between said members, said body-covering member providing otherwise unattached side portions on each side of such connection free of connection to said body-encircling member, said side portions being repeatedly folded from the sides toward such connection to form two longitudinal roll-like elements positioned adjacent each other, the ends of said roll-like elements being repeatedly folded toward said connection to provide adjacent folded packs near such connection; and quick-release means attached to said body-encircling member and at least partially encircling said folded packs for quickly releasing same to permit unfolding of said packs and said longitudinal roll-like elements, one portion of said body-covering member providing graspable means secured thereto and extending from an interior portion of the corresponding folded pack for unfolding and drawing such one portion over the head of the wearer.

4. In a wearable protective cover structure for covering the body of the wearer and protecting against nuclear heat radiation, the combination of: a body-encircling member; a light-colored body-covering member connected exclusively locally to a portion of said body-encircling member and providing end portions respectively beyond the point of local connection and free of connection to said body-encircling member, said end portions being of sufficient area to cover the wearer from head to foot when the wearer is in substantially prone position, one of said end portions including two hand grips, said end portions being respectively folded into adjacent folded portions lying adjacent and outside said body-encircling member, said hand grips protruding from the resulting folded portion for respective gripping by the hands of the wearer to unfold and pull said one of said end portions over the head of the wearer; releasable means for holding said folded portions adjacent and outside said body-encircling member; and means for operatively connecting at least one of said hand grips and said releasable means to release the latter upon pulling of the former.

5. In a wearable protective cover structure which can be quickly released from folded position to cover the body of the wearer preparatory to falling to and when in a substantially prone position to protect the wearer against intense heat radiation, the combination of: a belt having a small intermediate portion at the back of the wearer; a body-covering member formed of foldable heat-reflective material and providing a small intermediate portion between the sides thereof and between the ends thereof; means for connecting said intermediate portions together, said means forming the exclusive connection between said belt and said member to provide otherwise-unattached end portions of said body-covering member respectively of a length to cover the upper and lower portions of the body of the wearer, said end portions being respectively folded laterally from the outer ends thereof toward said intermediate portion into two roll-like elements immediately adjacent each other at the periphery of said belt, said roll-like elements conforming to the contour of the belt when worn by the wearer so that the ends of the roll-like elements are positioned to the front of the wearer, one end portion of said body-covering member including two graspable means protruding from the corresponding roll-like element and adapted to be grasped by the hands

of the wear to pull said end portion over the head of the wearer; and quick-release means for connecting said ends of said roll-like elements to said belt, at least one of said graspable means being operatively connected to said quick-release means to release said ends of said roll-like elements upon pulling of such graspable means.

6. A wearable protective cover structure for covering the body of the wearer against nuclear heat radiation preparatory to falling to and when in a substantially prone position, said wearable protective cover structure including: a body-encircling member providing a small intermediate portion at the back of the wearer; a body-covering member formed of heat-reflective material providing a small intermediate portion connected to said portion of said body-encircling member and forming the sole connection between said members, said body-covering member providing otherwise-unattached side portions on each side of such connection and providing otherwise-unattached end portions on opposite ends of such connection, each of said end portions being folded laterally to form rol-like elements paralleling the periphery of said body-encircling member and lying immediately adjacent each other; quick-release means for releasably connecting the ends of said roll-like elements to said body-encircling member; and graspable means secured to the corners of one of said end portions of said body-covering member and protruding from the ends of the corresponding roll-like elements to be grasped by the respective hands of the wearer to unfold said one end portion and draw same over the head of the wearer, said graspable means being operatively connected to said quick-release means to release automatically said ends of said roll-like element when said graspable means are grasped by the hands of the wearer preparatory to pulling said one end portion of said body-covering member over the head of the wearer.

7. A wearable protective cover structure for covering and protecting the body of the wearer against nuclear heat rays when in substantially prone position and quickly releasable from its worn position at a time no latter than during falling to such substantially prone position, said cover structure comprising: a body-encircling member

providing a limited-area portion between its ends; a folded body-covering member of heat-reflective material having a small intermediate zone overlying said limited-area portion of said body-encircling member, said body-covering member being of sufficient size to cover the wearer completely when in said substantially prone position and to provide ground-engaging edge portions engaging the ground around the wearer when in such substantially prone position; means for securing said body-covering member to said body-encircling member exclusively in such overlying zone whereby said body-covering member provides upper and lower end portions and side portions which together peripherally surround the zone of attachment of said body-covering member to said body-encircling member and which individually are free of any permanent connection with the latter except in the overlying zone, said upper and lower end portions being folded into an area adjacent said body-encircling member; a graspable means and means for securing same to said upper end portion to aid in drawing the latter toward head-covering position; a quick-release means holding said folded portions in said area adjacent said body-encircling member; and means for operatively connecting said graspable means to said quick-release means, a single movement of said graspable means actuating said quick-release means and drawing the upper end portion toward said head-covering position.

References Cited in the file of this patent

UNITED STATES PATENTS

523,177	Rice	July 17, 1894
1,022,462	Brink	Apr. 9, 1912
1,346,320	Law	July 13, 1920
1,793,737	Estes	Feb. 24, 1931
2,139,579	Dier	Dec. 6, 1938
2,344,010	Walsh	Mar. 14, 1944
2,404,225	Green	July 16, 1946
2,420,344	Alexander	May 13, 1947

FOREIGN PATENTS

414,220	France	June 14, 1910