May 24, 1949. M. M. McDONALD 2,471,071

BODY PROTECTING SHIELD

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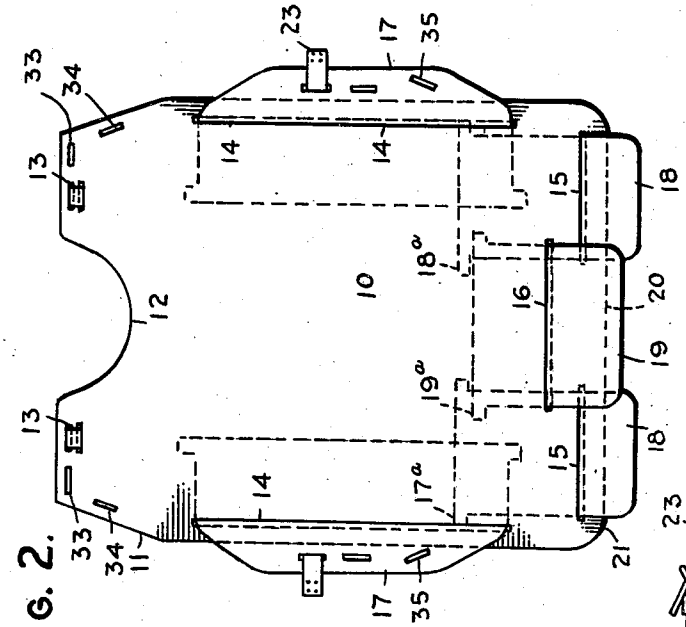


FIG. 2.

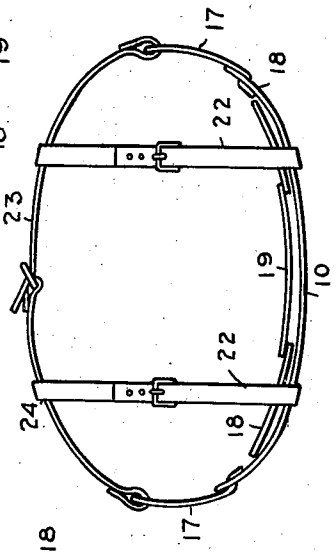


FIG. 4.

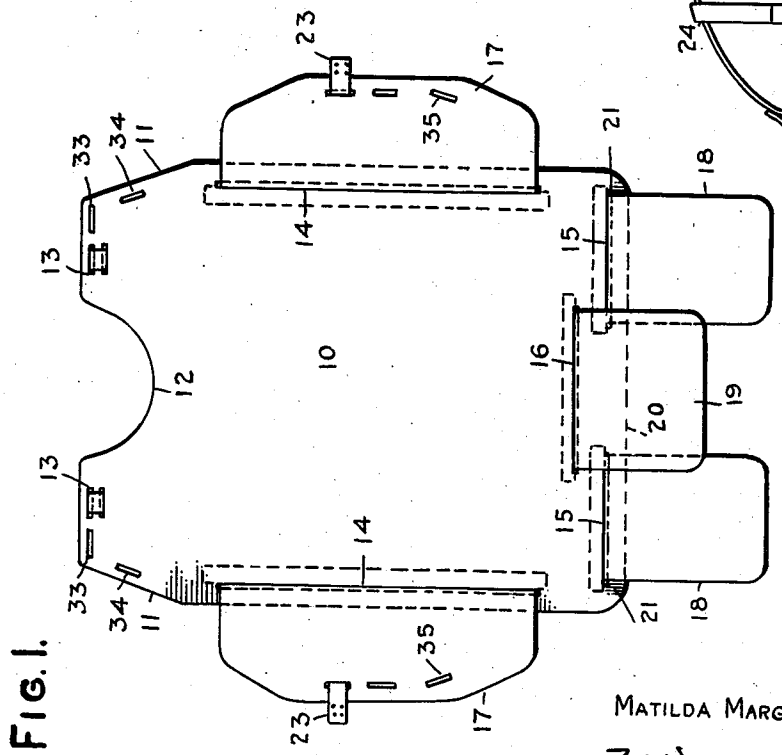


FIG. 1.

INVENTOR
MATILDA MARGARET McDONALD.

By Williams & Williams

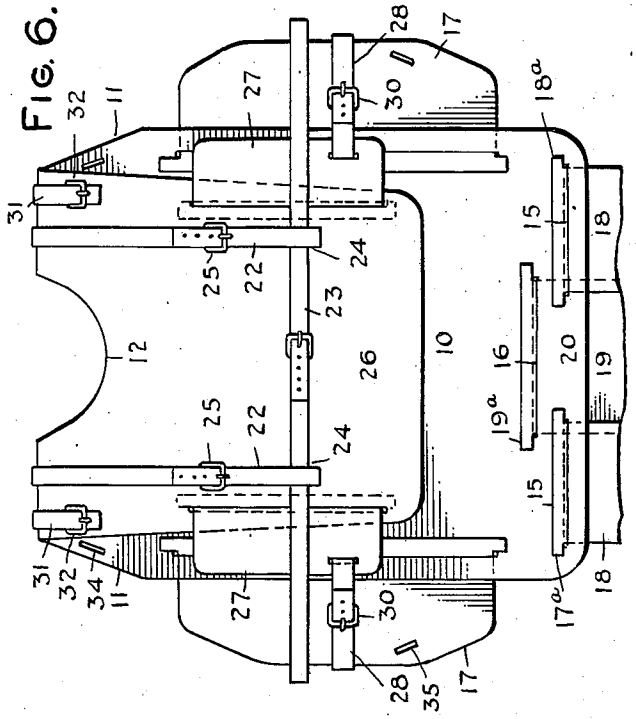
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BODY PROTECTING SHIELD

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FIG. 6.



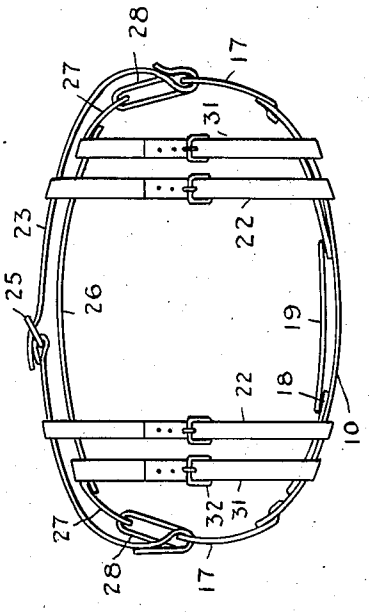


FIG. 5.

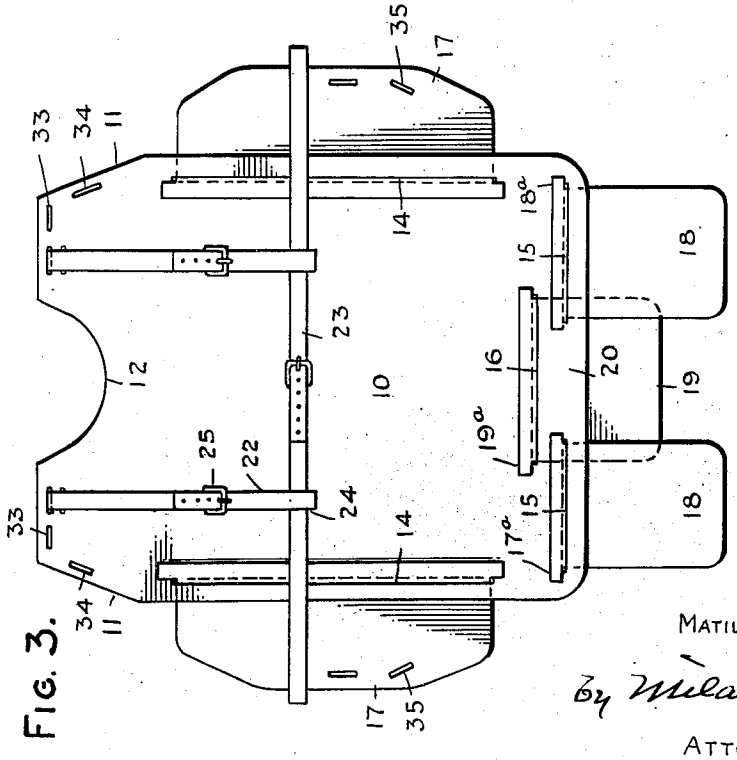


FIG. 3.

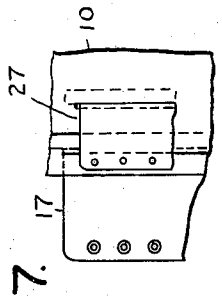


FIG. 7.

INVENTOR.
MATILDA MARGARET McDONALD.

By Williams & Williams

ATTORNEYS.

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# UNITED STATES PATENT OFFICE

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## BODY PROTECTING SHIELD

Matilda Margaret McDonald, Columbus, Ohio

Application May 14, 1946, Serial No. 669,597

11 Claims. (Cl. 2—2.5)

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This invention relates to improvements in body protecting shields, and has for its primary object the provision of such a shield adapted for military or naval use, and possessing structural characteristics enabling the shield to be readily assembled and applied to the user, or collapsible, or disassembled to occupy minimum space for purposes of storage, shipping or the like.

The preferred embodiment of the invention comprises a shield having a main front (and in instances a similar back) portion formed of sheet metal or other bullet-proof material substantially flat, or but slightly curved to conform to the contour of the body of the user, to which front is adjustably connected lateral or side portions to protect the sides of the wearer and similarly adjustable leg and intervening portions to protect the upper leg portions of the wearer.

Such preferred embodiment of the invention further embraces a novel slidable connection between the auxiliary portions of the shield and the main or front protecting portion whereby the former may be either detached for stacking and shipping in numbers, or may be withdrawn to occupy superimposed relationship with the front protecting portion, so that the entire device may, in collapsed condition, be confined substantially within the area defined by the marginal or surrounding edge of the front protecting portion, enabling the devices, as an entirety, to be stacked in relatively flat formation for storage or shipment in quantity, and in minimum space required therefor.

The invention still further has for its object, in said preferred embodiment thereof, the correlation and formation of the adjustable connections of the leg or appended protecting portions of the shield whereby the same may move in conformity with the raising of the legs, or either of them from an extended or vertical position, so as to not interfere with the comfort or freedom of movement of the wearer.

The foregoing and still other advantageous characteristics of the invention will be more fully or better understood from the detailed description hereinafter contained when read in connection with the accompanying drawings forming part hereof and wherein the preferred embodiment of the invention is illustrated.

In the drawings:

Figure 1 is a front elevation of the shield with the adjustable depending and lateral protecting portions in fully extended positions.

Figure 2 is a similar view of the shield collapsed, that is, with the said portions withdrawn beneath

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the main front portion or in parallel or superimposed relationship therewith.

Figure 3 is a rear elevation or back view of Figure 1.

Figure 4 is a top view showing the manner of affixing the shield to the body.

Figure 5 is a similar top view showing the utilization of the device of the preceding figures in connection with a shield portion for the back of the user.

Figure 6 is a rear elevation to illustrate the fastening means for securing the device to the body of the user when the back shield is employed.

Figure 7 is a detail view of a slightly modified construction.

Referring more specifically to the drawings, wherein like reference characters refer to the same parts in the several views, 10 represents the main body or front protecting portion of the shield substantially flat in cross section, which is formed of suitable metal or bullet-proof fabric, or other equivalent material, that may be flexed or bent to conform to the body of the user, the same being provided with shoulder portions 11 and an intermediate cutaway portion 12 to accommodate the neck and chin of the wearer. In the shoulder portions there are slots or apertures 13, for a purpose to be later pointed out. Near the margins of the sides and bottom of the shield portion 10 are slots 14, 15 and 16, the slots 14 running parallel with the side edges to accommodate lateral shield members or flaps 17, the slots 15 being parallel with the bottom edge of the shield portion 10 to accommodate leg protecting portions 18, and the slot 16 being intermediate the slots 15, and somewhat overlapping the inner ends of the latter to accommodate an intermediate protecting portion 19. The side flaps or extensions 17 are designed to pass around the body of the wearer at the sides of the latter, below the arms, and the portions 18 are adapted to overlie the upper portions of the legs, as will be obvious, the leg protecting portions 18 underlying the intermediate protecting portion 19.

The protecting portions 17, 18 and 19 are adjustably or removably connected to the front protecting portion 10 of the shield through the medium of passing the shield portions through their respective slots from the rear to the front of the device, the rim or marginal portions 20, of the front protecting portion 10, being deflected slight-

ly in a rearward direction, as at 21, so that the flaps and depending extensions 17, 18 and 19 will when extended lie flat with the shield portion 10 rather than project forwardly at right angles to the plane of said portion 10. T-heads 17a, 18a and 19a constitute the inner ends of the laterally projecting and depending flaps to contact the ends of their respective slotted portions to limit the outward movement of the flaps, as is clearly illustrated in Figure 3.

From the foregoing it will be seen that the lateral and depending protecting parts 17, 18 and 19, when not in use, may be slid inwardly beneath the front body or protecting portion 10, within the marginal portions of the said portion 10 and beneath the same, when it is desired to stack and ship the devices, or said portions may be entirely removed rearwardly of the slots and portion 10, and themselves stacked for shipment apart from the similarly stacked or nested portions 10, dependent upon the flexibility or initial formation of the side protecting flaps or shield portions 10 and 17. They may be originally formed or flexed to a slight curvature to conform, generally, to the body of the wearer and permit the members 17 to pass somewhat rearwardly to protect the sides of the wearer when the shield is in use and the members 17 connected around the body of the wearer by a strap 22, passing through the slots or apertures 14 in the shield portions 17. The supporting of the shield on the body, by the strap or belt 22, may be supplemented by similar straps 23 sleeved upon the strap 22, as at 24, and engaged with the slots 13 in the shoulder portions 11, suitable buckles 25 or equivalent means, as snap ball and socket devices, being employed for the purpose.

When the back protecting portion, indicated at 26, is employed—the same having complemental side flaps or portions 27, adjustable with respect to the back protecting portion 26, the same as heretofore pointed out in connection with the side flaps 17—the then adjacent side protecting portions 17 and 27 may be secured together by little straps 28, sleeved therethrough (slots 29 being provided for the purpose) and secured in place through the medium of buckles or equivalent devices 30. The upper ends or shoulder portions of the back shield will be connected to the shoulder portions 11 in the same manner and secured by similar little straps 31 and fasteners 32, slits 33 complemental to the slots 13 enabling the accomplishment of this result.

In lieu of the buckled little straps referred to, fasteners may be themselves directly attached and form a part of the lateral projecting portions 17 and 27 and shoulder portions of the front and back protecting member 10 and 26 (see Figure 6), as is obvious, and, in fact, minor changes in the construction and arrangement, while permitting the performance of the various functions and results pointed out, may be resorted to without departing from the spirit of the invention, as particularly pointed to in the hereto appended claims.

It may furthermore be desirable at times to have provision for securing the shield to the user by means of crossing straps over the back of the user, and to enable this to be accomplished in a smooth and easy manner, the shoulder portions 11 have the inclined slots 34 disposed parallel to the companion slots 35 in the side flaps 17, for the passage of the crossing straps when utilized in place of the horizontal belt 32 and upright straps 22, as previously mentioned.



I claim:

1. A protecting shield or armor, comprising an enlarged front portion, and means for supporting the same on the body of a user, in combination with depending leg protecting members having slidable and swinging connecting means with the lower end of said portion for self-adjustment thereof longitudinally with respect to the body portion and in a forward swinging direction to conform to the raising and lowering movements of the legs of the user, said slidable and swinging connecting means comprising slotted portions of the front enlarged portion through which the leg protecting members may slide and hinge.

2. A protecting shield or armor, comprising an enlarged front portion, and means for supporting the same on the body of a user, in combination with depending leg protecting members movably connected to the lower end of said portion for self-adjustment thereof both longitudinally with respect to the body portion and in a forwardly swinging direction to conform to the raising and lowering movements of the legs of the user, the movable connecting means comprising slotted edges of the front portion arranged for vertical passage of the leg protecting members and offset portions of the latter engaging walls of the slots to limit the downward movement of the leg protecting members, and an intermediate protecting portion similarly connected to the front portion between the leg protecting members and overlapping the same, said intermediate protecting portion being swung forwardly and upwardly when engaged by the leg protecting members.

3. A protecting shield or armor, comprising an enlarged front portion, and means for supporting the same on the body of a user, in combination with a supplemental protecting member marginally connected to said portion for adjustment relative thereto, the connecting means comprising a slotted part of said front portion through which the supplemental protecting member is slidable, and said protecting member having a T-shaped inner end to cooperate with the wall of the slot in limiting outward movement of the supplemental protecting member.

4. A protecting shield or armor, comprising an enlarged front portion, and means for supporting the same on the body of a user, in combination with independent spaced depending leg protecting members and lateral independent side flaps each having connecting means for attachment to the front portion for vertical sliding movement of the leg protecting members and horizontal sliding movement of the side flaps relative to the front portion, the connecting means being also formed to pivot the leg protecting members and side flaps for movements transversely of said front portion.

5. A protecting shield or armor, comprising an enlarged front portion, and means for supporting the same on the body of a user, in combination with depending leg protecting members and lateral side flaps each having connecting means for attachment to the front portion for sliding movement relative thereto, the connecting means being also formed to pivot the leg protecting members and side flaps for movements transversely of said front portion, and all of said leg protecting members and side flaps being of T-head formation to limit their outwardly projecting movements.

6. A protecting shield or armor, comprising an enlarged front portion, and means for support-

ing the same on the body of a user, in combination with slidable and detachable supplemental protecting members having detachable connecting means through the front portion for extension therefrom and whereby said supplemental members may be withdrawn beneath the front portion for nesting or separated therefrom for separate storage or shipment, said detachable connecting means comprising slotted portions of the front portion through which the supplemental protecting members slidably engage and are free for removal therefrom.

7. A protecting shield or armor, comprising an enlarged front portion and a rear portion, in combination with pairs of lateral side flaps on both said front and rear portions, each pair having connecting means with the said portions for self-adjustment thereof with reference to the front or rear portion to which it is connected, and swinging movement to permit the flaps of each pair to be adjusted towards each other, and means for holding them in such condition.

8. A protecting shield or armor, comprising an enlarged front portion and a rear portion, in combination with pairs of lateral side flaps on both said front and rear portions, each pair having connecting means with the said portions for self-adjustment thereof with reference to the front or rear portion to which it is connected, and swinging movement to permit the flaps of each pair to be adjusted towards each other, and means for holding them in such condition, the front and rear portions having shoulder extensions, and detachable means for holding said extensions together.

9. A protecting shield or armor, comprising an enlarged front portion and a rear portion, in combination with pairs of lateral side flaps on both said front and rear portions, each pair having connecting means with the said portions for self-adjustment thereof with reference to the front or rear portion to which it is connected, and swinging movement to permit the flaps of each pair to be adjusted towards each other,



and means for holding them in such condition, the front and rear portions having shoulder portions, the shoulder portions and the side flaps having means to accommodate shoulder-supporting straps.

10. A protecting shield or armor, comprising an enlarged front portion, in combination with a lateral side flap having connecting means with the front portion for self-adjustment thereof, and swinging movement to permit said flap to be disposed rearwardly at the side of the user, the front portion having an upwardly extending shoulder portion, and said shoulder portion and the side flap having means to accommodate shoulder-supporting straps, said connecting means comprising a slotted portion of the front portion through which the said flap passes and may swing.

11. A protecting shield or armor, comprising an enlarged front portion, and means for supporting the same on the body of the user, in combination with supplemental protecting members having slidable connecting means through the front portion for extension therefrom and whereby said supplemental members may be withdrawn beneath the front portion for nesting, said connecting means including slotted portions in the enlarged front portion through which the supplemental protecting members loosely pass.

MATILDA MARGARET McDONALD.


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