O. L. BOUCHER.

BODY ARMOR.

APPLICATION FILED NOV. 8, 1915.

1,210,407.

Patented Jan. 2, 1917.

4 SHEETS—SHEET 1.

Fig. 1

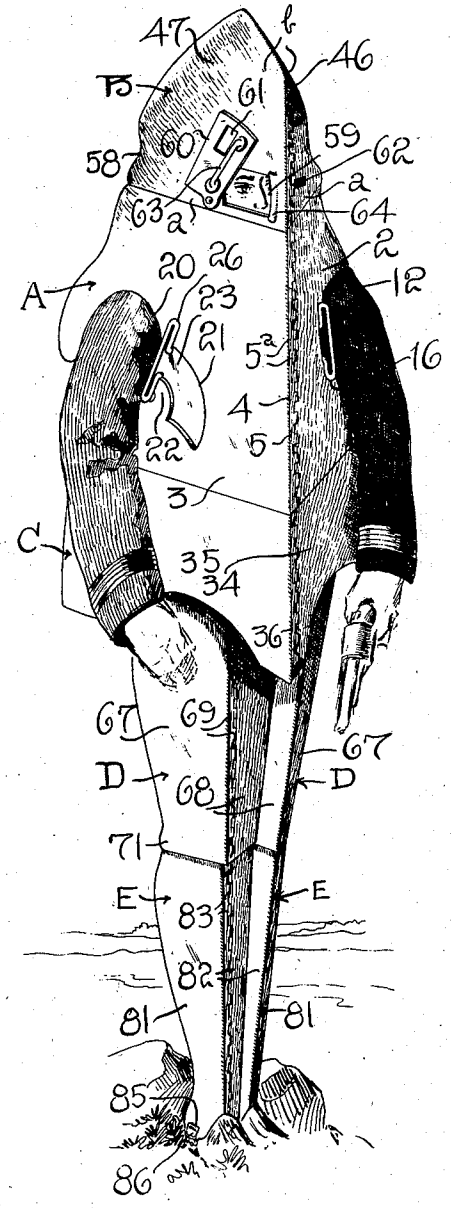
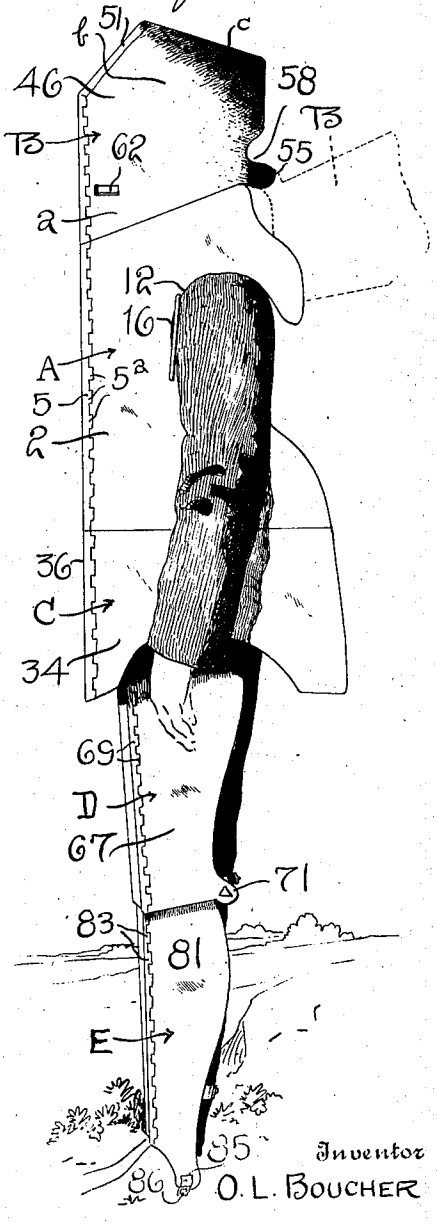


Fig. 2



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4 SHEETS—SHEET 2.

Fig. 3

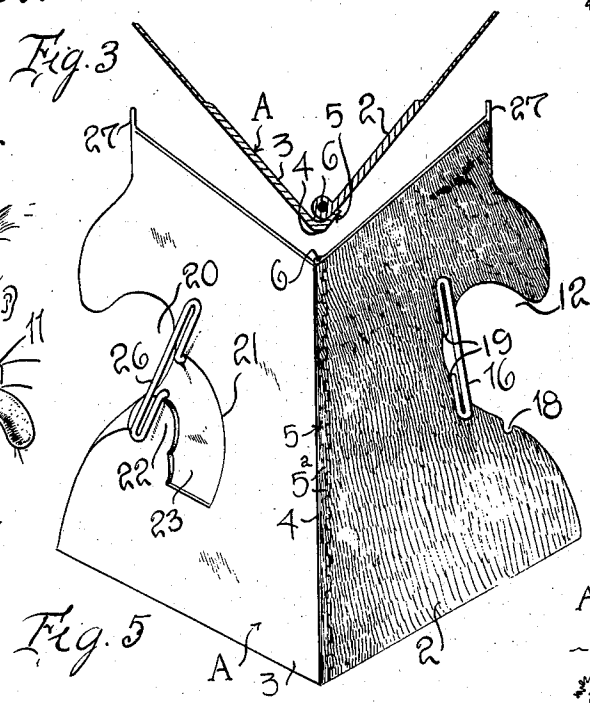


Fig. 6

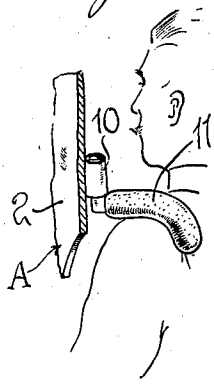


Fig. 5

Fig. 20

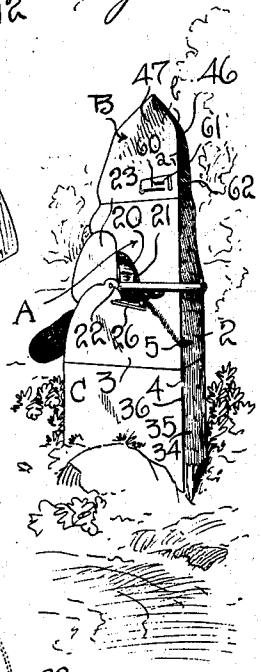


Fig. 4

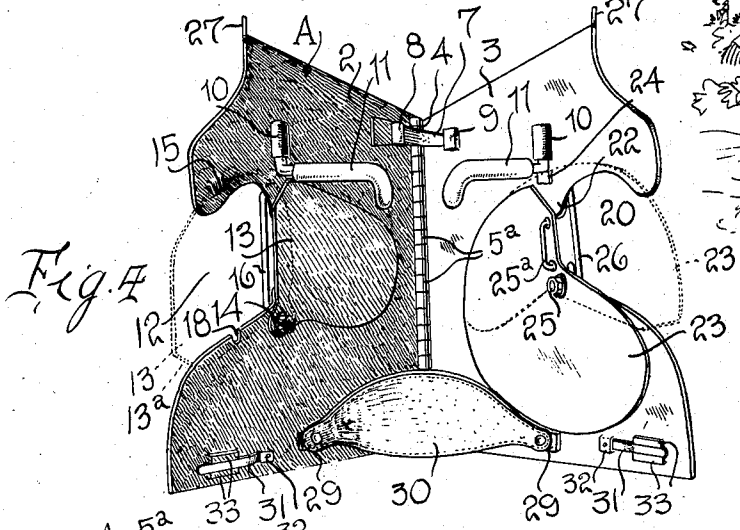
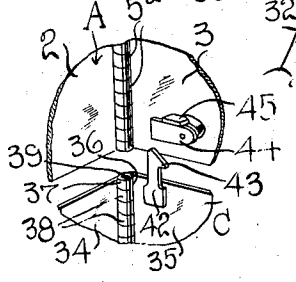


Fig. 7



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4 SHEETS—SHEET 3.

Fig. 21

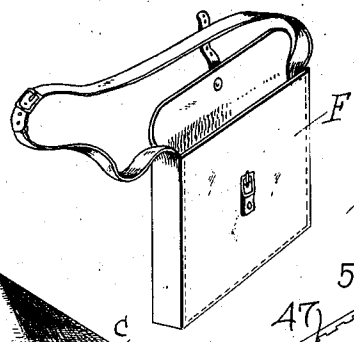


Fig. 10

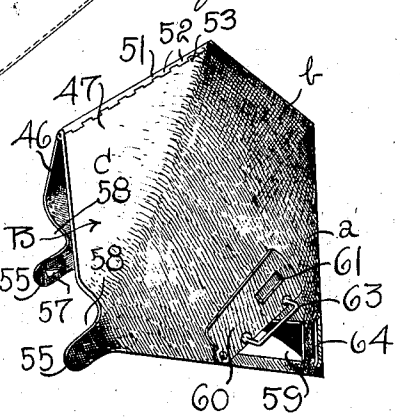


Fig. 9

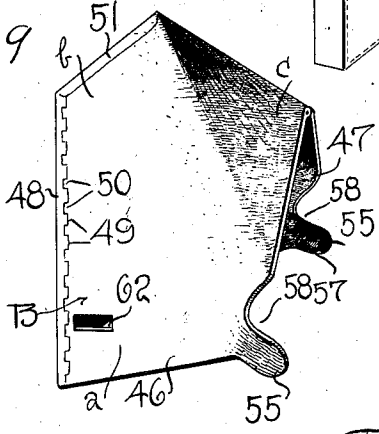


Fig. 11

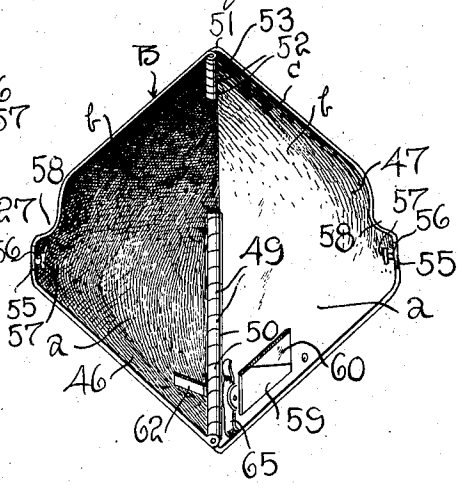


Fig. 8

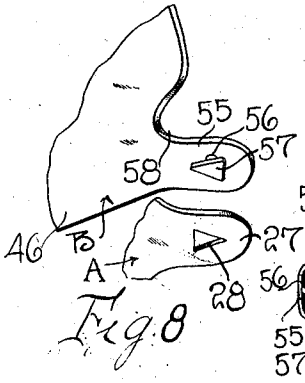


Fig. 12

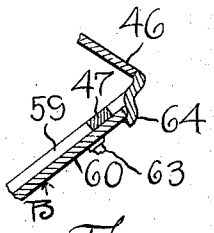
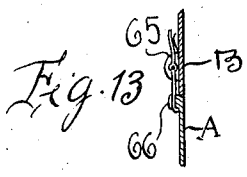


Fig. 13



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4 SHEETS—SHEET 4.

Fig. 19

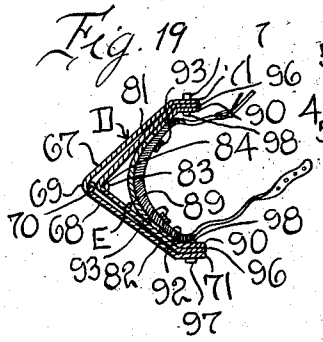


Fig. 15



Fig. 14

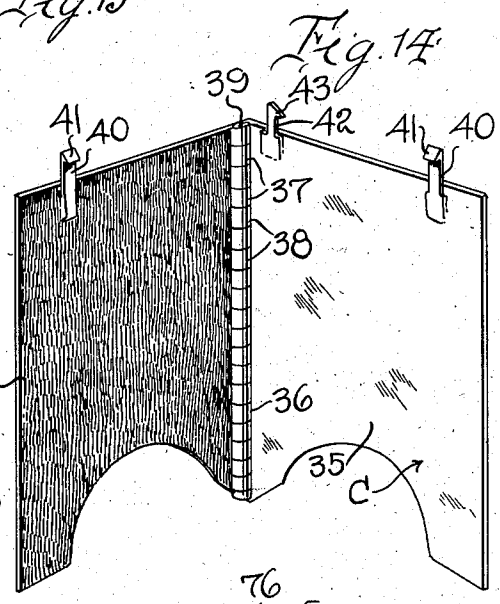


Fig. 16

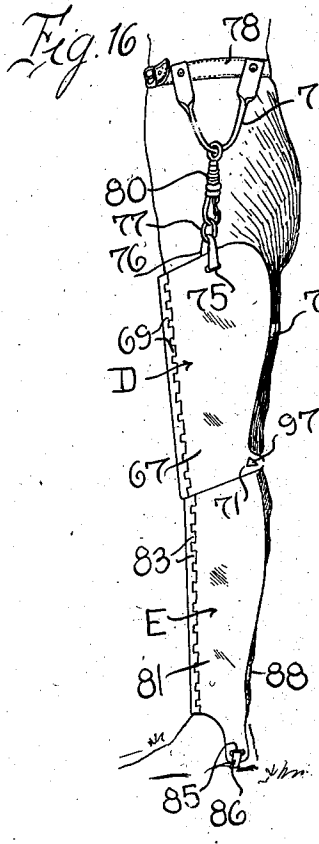


Fig. 18

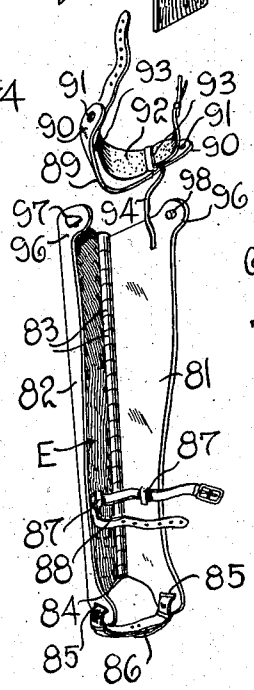
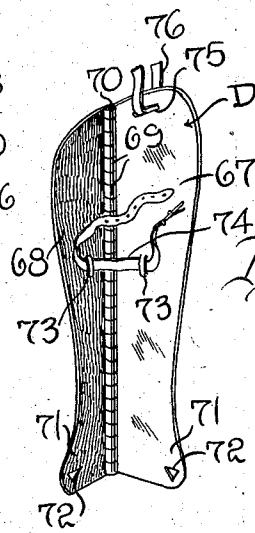


Fig. 17



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UNITED STATES PATENT OFFICE.

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BODY-ARMOR.

1,210,407. Specification of Letters Patent. Patented Jan. 2, 1917.

Application filed November 8, 1915. Serial No. 60,312.

To all whom it may concern:

Be it known that I, OTIS L. BOUCHER, a citizen of the United States, residing at Snyder, in the county of Kiowa and State of Oklahoma, have invented certain new and useful Improvements in Body-Armor, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to armor, and particularly to armor designed to be worn by soldiers.

The primary or general object of my invention is the provision of an armor which is relatively light, which will afford a maximum degree of protection to the vital parts, and which may be easily packed for transportation.

A further object of the invention is the provision of armor constructed in sections and so formed that any one of these sections may be worn in conjunction with any of the other sections and to suit any particular circumstance of battle.

A further object of the invention is the provision of armor which can be used either for infantry or cavalry, and which may be also used as a breastwork in trenches or for infantry lying down.

Still another object of the invention is to provide an armor which is so constructed that it presents an armor face at an angle of 115 degrees to the line of fire, and which is so constructed that the person wearing the armor has relatively free use of his arms and legs.

Still another object of the invention is to provide an armor including a helmet so formed that the helmet may be thrown back so as to entirely uncover the head or may be thrown forward so as to cover the front portion of the head, this helmet being provided with observation openings one of which may be increased in size so as to permit the use of field glasses.

Another object of the invention is to provide means whereby the armor may be readily supported entirely upon the shoulders of the wearer so that the weight may be most readily sustained.

Still another object is to provide means whereby the openings through which the arms ordinarily project may be closed entirely, the shiftable closures for these openings being so arranged that a very slight movement of the arms will cause the closures to open.

Still another object is to provide means whereby the armor may be used as a breastwork either in a vertical position or in a horizontal position, and in the latter case may be used with either one thickness or two thicknesses of metal.

A still further object of the invention is to provide means whereby the sections of the armor may be readily detached from each other or connected up, and to construct these sections in such manner that they may be folded flat so that the entire armor may be carried compactly in a case so as to be readily transportable.

Still another object is to provide an armor which may be used as a protection for a soldier who is wounded.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of the armor in use; Fig. 2 is a side elevation of Fig. 1; Fig. 3 is a transverse sectional view of the body section of the armor; Fig. 4 is a rear perspective view of the same; Fig. 5 is a front perspective view of the same; Fig. 6 is a detail fragmentary perspective view showing the manner in which the armor is supported upon the shoulders of a wearer; Fig. 7 is a detail fragmentary perspective view showing the manner in which the body section is connected to the thigh section; Fig. 8 is a fragmentary perspective view showing the manner in which the helmet is connected to the body section; Figs. 9 and 10 are perspective views of reverse sides of the head piece A; Fig. 11 is a perspective view looking toward the front of the helmet from the rear; Fig. 12 is a detail fragmentary section through the front of the helmet; Fig. 13 is a detail vertical section through the lower portion of the helmet and the upper portion of the body member showing the catch for engaging the two; Fig. 14 is a

perspective view of the thigh protecting section; Fig. 15 is a fragmentary transverse section of the upper portion of the body protecting piece showing the brace; Fig. 16 is a side elevation of the leg protecting armor in position; Fig. 17 is a rear perspective view of the armor for protecting the upper leg; Fig. 18 is a like perspective view of the armor protecting the lower leg; Fig. 19 is a transverse section through the leg protecting armor at the knee joint; Fig. 20 is a perspective view illustrating the manner in which the armor may be used as a breastwork; Fig. 21 is a perspective view of the carrying case.

In the drawings I have shown the armor as constructed in seven sections, namely, a breastplate or cuirass A, a head piece or helmet B, a thigh shield C, a section D protecting the upper portion of the leg, and a section E protecting the lower portion of the leg. Each of these sections is detachable from the adjacent section, and practically speaking, any of these sections may be used in conjunction with the breast-plate A, which, except as regards the leg armor, forms the supporting means for all the other sections.

In view of the fact that the section A is that section of the armor which practically must be worn and is to a certain extent the most important section of the armor, I will describe it first.

The section A which covers and protects the breast and that portion of the body extending from the neck to the waist, is preferably formed of two metal plates 2 and 3, of suitable thickness and preferably of steel. One of these plates, as for instance the plate 3, is bent or angled at its inside edge along the line 4, and the margin of this bent or angled portion 5 is formed with a plurality of hinge beads 5^a which coact with certain hinge beads formed upon the plate 2. The joint between the plates 2 and 3 is of course as close as possible. Passing longitudinally through the beads and hingedly connecting the plates 2 and 3 is a pintle 6. For the purpose of holding the plates at an angle of less than 45 degrees, one of the plates, as for instance the plate 2, is provided with a hinged dog 7 which is hinged to the plate 2 at 8, this dog being insertible within a strap 9 or socket formed upon the plate 3. When this dog is in position it holds the plates at an angle of somewhat less than 90 degrees, and when the dog is removed from engagement with the strap or socket 9 the plates may be folded together into an approximately parallel relation. Pivotally mounted upon the inside of the plates 2 and 3 in suitable hinge beads 10 are the shoulder engaging supporting members, designated 11, each of these members being slightly curved outward and covered with leather or suitable padding. The shanks of the members extend upward and through the beads 10 and are overturned at their upper ends. These members 11 may be turned in flat against the side of the armor or turned outward as illustrated in Fig. 6 so as to rest upon the shoulders of the wearer and extend behind his neck.

The plate 2 at its edge is cut away as indicated at 12 so as to form an aperture opening upon the edge of the plate through which the left arm of the soldier may be projected. This aperture may be closed by means of a shutter 13 which is pivoted at 14 and which has approximately the form of the aperture or cut-away portion. The shutter is held in position or guided into a closed position by means of the projecting lip 15. The exterior of the shutter is formed with the handle 16 which has preferably the form of a flattened loop connected at two points to the shutter. The edge of the opening 12 is notched at 18 and at 19 to accommodate those portions of the flattened loop which engage the shutter itself. When the shutter is closed in the position shown in dotted lines in Fig. 4 it forms practically a continuation of the side wall. When turned back, however, it completely discloses the opening 12. The opposite plate 3 is also formed with a more or less circular cut-away portion or opening 20, and extending from this opening is an arcuate extension of the opening, designated 21. Pivoted upon the portion 22 which is approximately concentric to the arcuate extension 21 is a shutter 23 which has substantially a scutate form and is held in position when closed by means of a lip 24 with which the curved edge of the shutter engages at all times. This shutter is pivoted at 25 and when the shutter is closed it entirely covers the opening 20 in the extension 21. As the outer edge of the shutter is moved inward, however, the opening 20 is gradually disclosed, and then as the shutter moves farther around, the opening 21 is disclosed, the shutter, however, in this case closing the opening 20 so that only the opening 21 is disclosed. The shutter is preferably provided upon its inside face with the handle 25^a whereby it may be manipulated from inside the armor. The exterior of the shutter is formed with the handle 26 which is disposed upon one end edge of the shutter, substantially radially to the pivotal point thereof and forms a stop limiting the movement of the shutter in either direction.

The upper corner of each of the plates 2 and 3 is provided with an outwardly projecting ear 27, this ear as illustrated in Fig. 8 being formed with an elongated or preferably slightly triangular opening 28. These ears 27 are for the attachment of the helmet, as will be later described. The lower

end of each plate 2 and 3 is formed with the ears 29 to which is attached a band 30 having a relatively great width, which band is adapted to rest against the stomach of the wearer and support the armor properly upon the body. This band is preferably made of flexible material, such as leather or webbing, and the normal position of the band is illustrated in Fig. 4.

As a means of connecting the lower section C to the section A in a manner which will be readily detached, I provide upon the section A at the lower edges of the plates 2 and 3 the spring catches 31 which are formed preferably of flat leaf springs attached at 32 each to its respective plate and engaging between the keepers 33 which have approximately the form of a flattened U and are attached to the plate. The section C which is designed to cover the thighs and lower portion of the body above the legs comprises the oppositely disposed metallic plates 34 and 35. The plate 34 is angularly bent along the line 36, and the edge of this plate is formed with beads 37 coacting with the beads 38 formed upon the inner face of the section 35. These beads are hingedly engaged with each other by means of a pintle 39 whereby the plates may be folded into an approximately parallel relation or extended to an angular position. At its upper outer corner the plate is formed with the upwardly projecting tangs 40 having a beveled head 41, this tang being adapted to be inserted in the keepers 33, the spring 31 engaging beneath the beveled head. The plate 35 adjacent the bend 36 is formed with the upwardly projecting tang 42 which is provided with the laterally projecting head 43. On the plate 3 at its lower end adjacent the fold 4 there is formed a keeper 44 having a pivoted detent 45. When the tang 42 is inserted in the keeper 44 this detent 45 is turned over and engages beneath the head 43 of the tang 42 and locks the tang from any downward movement. It will thus be seen that the section C is engaged at three points with the section A but that it may be readily disengaged whenever desired. It will also be seen that the section C by reason of its engagement with the section A is supported upon the shoulders of the wearer by the use of the shoulder engaging supports 11.

The helmet or head piece is illustrated in Figs. 9, 10 and 11. This also is in the form of two plates 46 and 47. These plates when joined extend downward on each side of the front of the face upward and inward at an angle and then downward and inward at an angle so as to cover and protect the top of the head. Each plate is formed to provide a face wall *a*, the downwardly and laterally projecting wall *b*, and the downwardly, laterally and rearwardly projecting wall *c*. The portion *a* is preferably made of heavy weight material; the mid-section *b* is preferably made of a thin material; while the section *c* is preferably made of relatively light material. The plate 47 is angularly bent at 48 and is formed with the hinge beads 49, while the plate 46 is also formed with a hinge bead 50. These hinge beads 49 and 50 are disposed along the section *a*. The upper section *b* of the plate 47 extends over and overlaps the upper margin of the portion *b* of the plate 46, as at 51, and the upper edge of the section *c* of the plate 47 is formed with hinge beads 52 which coact with hinge beads 53 formed upon the upper edge of the portion *c* of the plate 46. The hinge beads 49 and 50 and 52 and 53 are connected by pintles in the usual manner. The rear edge of each plate 46 and 47 is formed with a rearwardly projecting ear or lug 55, these ears being bent into parallel relation to each other. Each ear is formed with the inwardly projecting stud 56, each stud having approximately a triangular head 57 for insertion through the approximately triangular openings 28 in the ears or lugs 27 on the section A. Above the lugs 55 the side plates of the helmet are cut out as at 58.

The head piece will be made of steel and consequently has a certain resilience and as it is naturally thin at the top and formed of sections hinged at the front, the top will flatten out by mere pressure and again assume its shape when the pressure is relieved. Thus it may be packed when completed.

The right hand plate 47 has an elongated relatively large segmental-shaped opening 59 closed by means of a pivoted shutter 60, this shutter having an elongated relatively small opening 61. When the shutter 60 is raised it permits field glasses to be used for looking through the opening 59. The opposite plate 46 is also formed with an eye-opening 62. The shutter 60 is formed upon its exterior face with a handle 63 and the shutter is held or guided into its closed position by means of an overhanging lip 64 formed by punching out the material of the plate 47. In order to hold the helmet in a closed position upon the section A, a spring detent or catch 65 is pivotally mounted upon the inner face of the plate 47 and the plate 3 of the section A is formed adjacent its upper edge with a lug 66 (see Fig. 13) with which this spring latch is adapted to engage. When this spring latch is engaged with the lug the helmet is held closed, but when it is desired to open the helmet and turn it back the spring latch may be disengaged from the lock and the helmet simply raised and thrown back.

The three sections of the armor heretofore described protect the head, the upper portion of the body from the neck to the waist, and the lower portion of the body from the waist to below the thighs. In order to pro-

vide means for protecting the upper and lower portions of the legs, I provide the upper leg armor section D and the lower leg armor or greaves E. As illustrated in Fig. 17, the armor for each upper leg comprises the two plates 67 and 68. The plate 67 is designed to go upon the outside of the leg while the plate 68 is designed to protect the inside of the leg. These plates are normally disposed at an angle of about 85 degrees to each other, more or less, and the plate 67 is hingedly connected to the plate 68 by the hinge beads 69 and pintles 70. The plate 68 is shorter than the plate 67 and its upper end is curved downward so as to fit the inside of the leg, while the upper edge of the plate 68 extends out approximately at right angles to the hinged joint. Both of these plates are caused to conform somewhat to the shape of the leg. At their lower ends the plates are formed with the ears 71, each of these ears being formed with an approximately triangular opening 72. In order to hold the section B to the leg, each of the plates 67 and 68 is provided upon its inside face with the loops 73 through which a strap 74 passes, this strap being provided with a buckle whereby it may be held to the leg.

In order to support the leg armor the plate 67 at its upper edge is formed with a slot 75 through which a strap loop 76 is passed, this strap being provided with a buckle whereby it may be adjusted and with a ring 77. A belt 78 passes around the waist of the wearer, this belt being provided with a suitable buckle and with a downwardly extending loop 79, each having a snap ring 80 at its lower end adapted to engage with the ring 77. It will be seen that these snap rings 80 are shiftable to a certain extent along the loops 79 and that inasmuch as the snap ring is swiveled, free flexibility will be given to the armor so as to permit the wearer to move his legs in any direction.

The greaves are formed as illustrated in Fig. 18 of two plates 81 and 82 both formed to conform more or less to the contour of the lower leg below the knee, these plates being hinged to each other by the formation of coacting beads 83 upon the plate and by the provision of a pintle 84 extending through the beads. The lower ends of the plates 81 and 82 are cut away to fit over the foot and are slotted as at 85 for the reception of a foot strap 86 which is formed so that it may be adjusted and passes beneath the foot of the wearer. Each of the plates 81 and 82 is formed upon its inside face with the flattened loops 87 through which passes a strap 88 which extends around the calf of the wearer.

Normally pivotally mounted at the upper end of each section E is a knee cap or rocker 89. This is approximately triangular in plan and relatively broad at its middle, tapering down toward its ends, and at each extremity is formed with the ears 90, these ears being perforated as at 91. This knee cap or rocker is lined with leather as at 92, the leather being held to the cap in any suitable manner, as by loops 93 formed upon the cap, the ends of the lining extending out to form straps whereby the knee cap may be buckled or otherwise attached immediately behind the knee. This knee cap is preferably permanently connected to one of the plates, as for instance the plate 81, by means of a small strap 94 so that it will not become disconnected from the plates. For pivotally connecting the greave sections to the upper leg sections and for pivotally connecting the knee cap to the greave sections, I provide the plates 81 and 82 with the upwardly and rearwardly projecting ears 96 which are bent so as to be disposed in approximately parallel relation. Passing through these ears are the pins 97 which on their inner ends are unheaded and adapted to be inserted through the openings 91 of the knee cap 89. On the outer faces, however, the pins 97 are formed with approximately triangular heads 98 adapted to engage through the approximately triangular openings 72 of the ears 71 on the upper leg pieces.

The purpose of forming the pins 95 with the triangular heads 97 is to pivotally connect the greaves to the upper leg pieces and yet prevent any accidental detachment of these leg pieces except by turning the greaves into a position approximately parallel to the upper leg pieces and then turning them into an angular relation when the parts are firmly engaged with each other for pivotal movement but without the danger of detachment. The same is true of the engagement of the helmet with the plates 2 and 3 by means of the ears 27. In this case also the helmet can only be disengaged by turning it completely back and inserting the studs in the triangular openings 28. The helmet is then rotated to a normal position which causes the headed studs 56 on the helmet to engage with the ears so as to prevent any detachment of the helmet.

It is to be understood that the plates 1 and 2 and the plates 34 and 35 are intended to be made of various weights or thicknesses of metal. Thus for instance, the middle portion of the section A is intended to be made of relatively thick material while the lateral margins of the sections of the plates 2 and 3 are to be made of relatively thin material. The section C is also so formed that the middle portion of this section is made of medium weight material somewhat lighter than the middle portion of the section A, while the lateral margin of the section C which extends over rearward of the legs is to be made of relatively light mate-

rial as is the helmet, as before stated. The middle of the plates is to be made of relatively heavy material, the plates becoming gradually thinner as they extend toward the rear.

By reference to Fig. 5, which is a cross sectional view of the body section A, it will be seen that the hinges are so formed that the joint does not come at the middle of the armor but to one side thereof, that is, on the plate 2, and further, it will be seen that the angularly turned edge of the plate 3 overlaps the plate 2 so that when the plates 2 and 3 are opened out to the angular position shown, the overlapping portion of the plate 3 will act as a stop preventing any further opening out of the plates. Thus the plate 2 and the plate 3 are prevented from opening beyond a certain angle, this angle being such that each of the plates is at an angle of 115 degrees to the direction of fire. This construction also prevents the plates from opening out when the armor is used as a breastwork with the plates extending downward and outward in converging relation and engaging with the ground. What is true of the section A of the armor is equally true of the section C, the head piece B, and of the leg armor.

As before stated, any of the various sections of the armor may be used with the main body of the breast-plate A. Assuming, however, that the complete armor is worn, it will be seen that the soldier is entirely protected from the crown of his head down to his feet and that in all of the sections of the armor the faces of the armor extend at an acute angle to the direction of fire. The complete armor is to be used in action, as when soldiers are crossing the zone of fire, in making charges on trenches, fortifications, etc. It is also adapted to be used in operating machine guns, for scouting and observation work and for cutting wire entanglements, and on all occasions where soldiers are exposed to rifle or shrapnel fire. The full armor gives protection to every part of the body but permits free use of the arms, hands and legs practically to the same extent as if the armor were not worn. Normally, and when the soldier is not actually using his rifle, the arms will be disposed at the sides of the body and will be protected by the armor, the shutters 13 and 23 being closed. When, however, the arms are raised, they pass naturally into the notches 13^a and 23^a under the shutters and thus as the arms are raised upward and outward the arm shutters are raised, allowing the arms to pass into the openings 12 and 22. As the edges of the arm openings are inward and away from the shoulder joints there is no interference with the arm, and thus the free use of the saber, bayonet, hand grenade, lance, pistol or other weapon is permitted. When the arms are withdrawn from the openings 12 and 20 the shutter is again easily closed either by manipulating it from the inside or by the long handles on the outside of the shutter.

Normally, the soldier will observe the enemy through the eye openings 61 and 62, but when a clearer view is desired, or in using field glasses, the eye shutter 60 is thrown open thus disclosing the opening 59. When out of immediate danger or when greater freedom is desired the latch 65 may be released and the entire helmet may be thrown back upon the shoulders of the wearer.

When the armor is intended to be used for cavalry, the lower section C of the body armor is detached from the section A thus bringing the armor above the saddle but giving protection from the front to all vital parts.

If the soldier is wounded he can lie down with the armor extending above him and is protected from further injury either from bullets or from being trampled under foot. Furthermore, the armor under these circumstances is a protection from steel darts and other missiles and a partial protection from the effects of explosives dropped from above. It will be seen that when lying in this position the helmet is disposed toward the front and as this helmet is pointed projectiles coming from the front will glance off, particularly in view of the very strong and rigid construction of the helmet. Furthermore this helmet and the armor itself, as viewed from above when the soldier is lying on his back, extends downward and outward laterally on each side so that falling missiles will be caused to glance laterally thus rendering the wearer particularly safe. The soldiers may lie upon their backs when exposed to heavy fire or to a dropping fire and with a very great decrease in mortality as compared with the mortality under ordinary circumstances of battle. It will also be obvious that the soldier may crawl toward the enemy and that the armor may be shifted to the back of the soldier for this purpose.

The entire weight of the armor rests on the shoulders by means of the padded shoulder supports which fit in close to the neck. Inasmuch as the armor has a tendency to swing in at the bottom it is held out in proper position by the wide leather strap at the bottom of the section A which bears against the stomach and thus the armor does not interfere with walking. When kneeling, one knee passes up on the inside of the armor without interference and the other of course rests upon the ground.

The armor can also be used as a breastwork and in several ways. Thus the armor may be disposed upon the ground transversely or parallel to the front with its sev-

eral sections spread out so as to be in an upwardly convergent relation and thus the soldier gains the protection of two thicknesses of steel, both surfaces of which are at an angle, and can rest his rifle across the top of the sections. It is obvious that the soldier can very readily remove the armor, leaving, if he desires, the head piece on the armor sections or on his own head and as readily assume the armor ready for an advance or for work at close quarters. Thus also several soldiers in close formation can place their several suits of armor on the ground and make a continuous breastwork behind which they can resist the attacks of the enemy, and it is obvious that in this position the head piece of one suit can be inserted within the relatively large end of the section C or the head piece may be removed.

The armor can also be used as a breastwork or shield by being disposed in a vertical position. In this case the lower end of the section C is forced into the ground so as to make the armor stationary. All of the shutters are closed with the exception of the shutter 23 on the right side. Under these circumstances the gun barrel is placed in the right arm opening 20 and turned around until it passes into the relatively small extension 21. In passing into this extension 21 the rifle will automatically close the shutter 23 behind it, leaving but a small opening through which to shoot. As the gun is swung toward the right in taking it out of the opening 20 the gun will again automatically move the arm shutter into its normal position.

The armor may also be used by laying it flat on the right side and resting the rifle in the opening 12. In this case, of course, the rifleman only gets the protection of one thickness of steel. Of course it will be obvious that two can use the armor at the same time with a degree of protection, one man of course carrying the armor and the other marching immediately behind the first man, and it will also be obvious that the armor has a length when laid upon the ground sufficient to form a breastwork for two men. It will be obvious also that when the armor is laid upon the ground so that the sections converge upward, then if both of the shutters 13 and 23 are opened the rifle may be inserted or passed through both of these openings and the rifleman will be entirely protected both as regards his head and body. This is particularly of advantage when the armor is used upon the side of a trench. Of course, when the rifle is not disposed through these arm openings the shutters may be closed so that snipers cannot pick off the riflemen through these arm openings.

The entire armor is detachable and foldable into a compact container designated F, as illustrated in Fig. 2. This container may be 24 inches by 20 inches and have a thickness of four inches. In order to detach and fold up the several pieces, the head piece B is swung back until it may be detached from the body portion A. Then the body section A is pressed inward so as to disengage it from the head piece. The head piece may then be folded together. The breast plate or body section A is then detached from the section C, and when these two parts are detached the two plates of the section C may be folded together. The main section A is then disposed on its side and is swung open until the dog 7 detaches from the strap 9. Then the shoulder supporting members 11 are folded back and the main body may be closed. The leg armor is detached by springing it open wide enough to release the knee rocker or knee cap. Then the upper and lower sections are turned until the triangle joint will separate and both parts are then folded. The head section A is placed inside of the section B, the section C is then placed over the section B and the leg armors are placed in last.

This armor is preferably made of toughened steel varying in thickness according to the amount of protection required over vital and non-vital parts. Some portions of the armor can be made very thin. Ordinarily speaking, two sizes of armor will fit nearly all men and the weight of the armor will range from 42 to 45 pounds for each suit. The cavalry equipment will weigh approximately 31 pounds. The sections A and C without the head piece will weigh approximately 21 pounds.

Having thus described my invention, what I claim is:

1. A suit of armor including a head piece and a body piece, the head piece at its rear being detachably and pivotally connected to the body piece.

2. An armor section comprising oppositely disposed side members, one of said side members being angularly bent at its forward edge and the other side member being hingedly connected to the angular bent margin of the first side member.

3. A suit of armor including a body and a thigh section, each section composed of hingedly connected side members normally disposed at an angle to each other, and means for limiting the movement of the side members into angular relation and to hold the side members disposed at an angle to each other, the side members of the body section being cut away to provide arm holes and the side members of the body section and of the thigh section extending beyond the rear of the wearer whereby to permit the armor to be supported entirely upon

the ground when the wearer is in a recumbent position.

4. A suit of armor comprising a head piece triangular in cross section opened at the rear, a body piece approximately triangular in cross section opened at the rear and detachably connected to the head piece, and a thigh piece approximately triangular in section opened at the rear and detachably connected to the body piece.

5. A suit of armor including a body piece composed of acutely angled side members, each side member being cut away to allow the projection of the arm of the wearer, and shields mounted upon the side members for adjustment across said openings.

6. A suit of armor including a body piece having acutely angled side members each side member having an opening extending inward from the rear edges of the side member to allow the projection of the arms of the wearer, and shields mounted upon the inside faces of the side members and movable in position across said openings.

7. A suit of armor including a body piece having acutely angled side members, each side member having an opening extending inward from the rear edges of the side member to allow the protection of the arms of the wearer, and pivoted shields adapted to be turned to extend across said openings or to be shifted to disclose said openings by pressure on the outer edge of each shield.

8. In an armor, a body piece having a side member formed with an arm opening and with a relatively narrow extension of said arm opening to provide a rifle rest.

9. In an armor, a body piece having a side member formed with an arm opening and with a relatively narrow extension of said arm opening to provide a rifle rest, and a shield mounted upon said side member for movement to close or disclose said opening and extension, said shield being shiftable into a position to close the arm opening but disclose the extension.

10. In an armor, a body piece including a side member having an arm opening extending inward from its rear edge and a downwardly curved relatively narrow extension of said opening forming a loop-hole, a scutate shield pivoted concentrically to the loop-hole and formed to entirely close said opening and the loop-hole when shifted into one position and to close said loop-hole but disclose said opening when shifted into another position.

11. An armor comprising a body section, a thigh section detachably suspended from the body section, and shoulder pieces mounted upon the inner face of the body section and adapted to engage with the shoulders of the wearer to entirely support the armor thereon.

12. A piece of armor including a body section, supporting members mounted upon the inner face of the body section for movement into a position approximately parallel to the walls of the body section or into a position projecting rearward therefrom to thereby support the body section entirely from the shoulders of the wearer.

13. A piece of armor including a body section approximately triangular in cross section, shoulder engaging supports mounted upon the inner face of the body section adjacent its upper end, and a flexible band extending across the body section adjacent its lower end and adapted to bear against the stomach of the wearer.

14. In a suit of armor, coöperating sections, each section having rearwardly projecting ears, the ears of one section having elongated perforations, the ears of the other section having laterally projecting pins provided with elongated heads insertible into said elongated perforations, said heads when the sections are in proper relative arrangement being disposed transversely across the elongated perforations.

15. In an armor, a body section composed of opposite plates hingedly connected to each other for movement into angular relation, a thigh section composed of plates hingedly connected to each other for movement into angular relation, means for detachably locking the upper end of the thigh section to the lower end of the body section, and means on the body section for supporting the body section upon the shoulders of a wearer.

16. In an armor, a head piece composed of two opposed plates of material, each plate being formed to provide a wall extending downward in front of the head, a wall extending upward and rearward and a wall extending downward and rearward, said plates being detachable and hingedly connected to each other along said first and last-named walls.

17. In an armor of the character described, a head piece approximately triangular in cross section to provide opposed side walls, one of said side walls having a large eye opening and the other a small eye opening, and a shield shiftably mounted upon the first named wall and shiftable over the large eye opening and having therein a relatively small eye opening.

18. In a suit of armor, a body piece and a head piece hinged at its rear to the body piece, and a latch detachably engaging the forward portion of the head piece to the forward portion of the body.

19. A suit of armor including a protective section composed of angularly related side walls, the section being open at its rear and formed with arm openings extending inward

into each side wall from the rear edge, shields mounted upon the side walls and adapted to be shifted over said openings, the arm openings forming loop-holes when the section is disposed in a horizontal position to provide a breastwork.

20. In a suit of armor, protecting sections composed of side plates, one of said plates having an angularly disposed margin, the other plate being hinged to said margin, and means for limiting the movement of the plates into a divergent position.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

OTIS L. BOUCHER.

Witnesses:
A. F. KEE,
O. B. RIEGEL.