

Aug. 25, 1936.

G. TRICAU

2,052,503

PARACHUTE

Filed Dec. 5, 1934

3 Sheets-Sheet 1

Fig. 1.

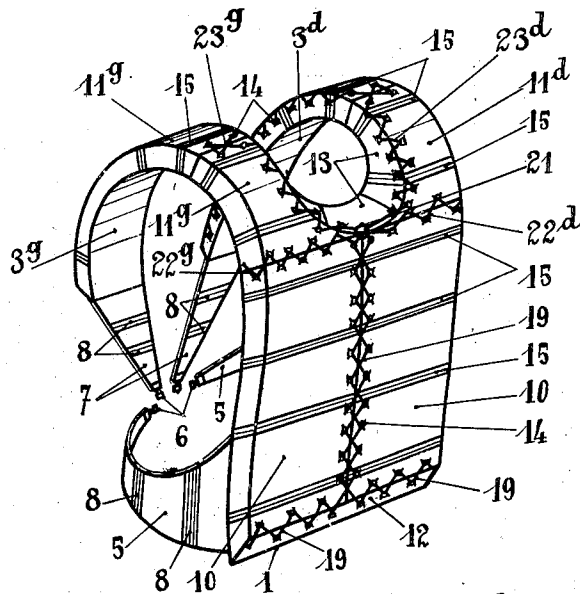
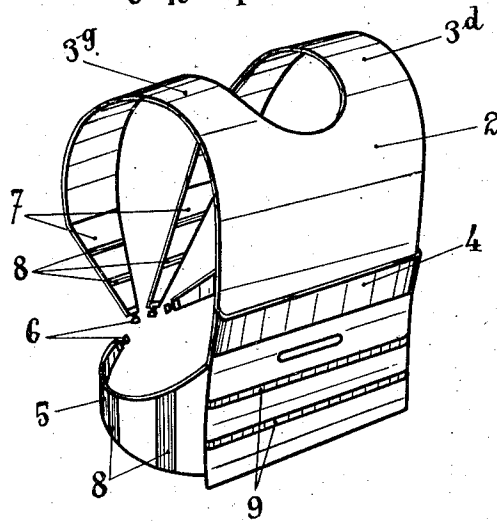


Fig. 2.



Inventor
Gabriel Tricau
by *Glascock, Downing & Seibold*
Attorneys

Aug. 25, 1936.

G. TRICAU

2,052,503

PARACHUTE

Filed Dec. 5, 1934

3 Sheets-Sheet 2

Fig. 3.

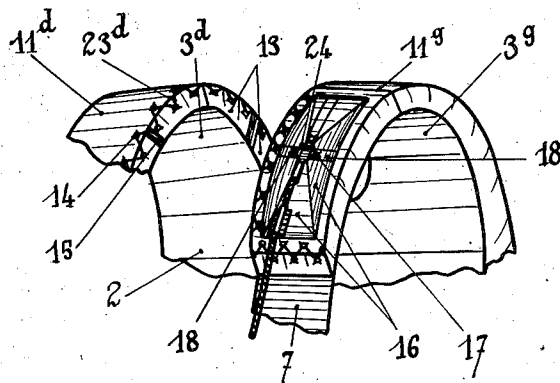
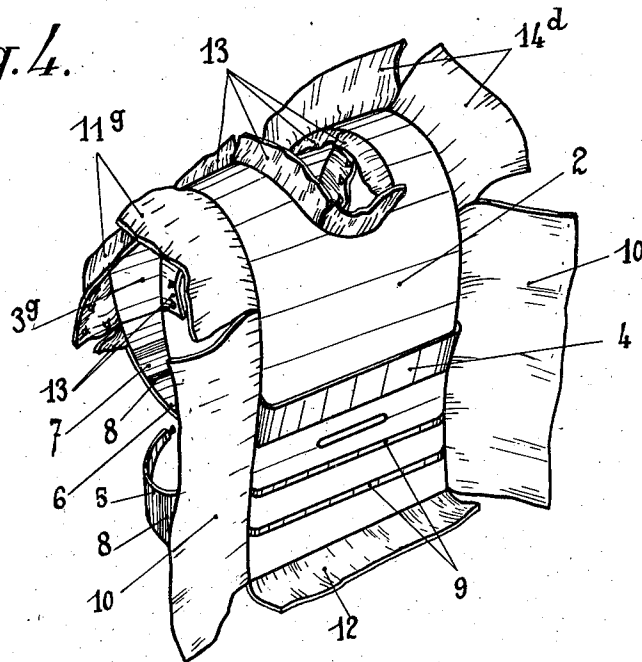


Fig. 4.



Inventeur
Gabriel Tricau
by *Glascok, Downing & Seebold*
Attorneys

Aug. 25, 1936.

G. TRICAU

2,052,503

PARACHUTE

Filed Dec. 5, 1934

3 Sheets-Sheet 3

Fig. 5.

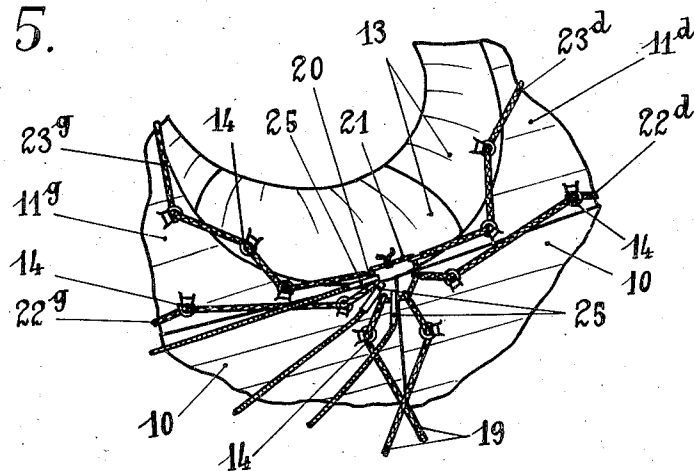


Fig. 7.

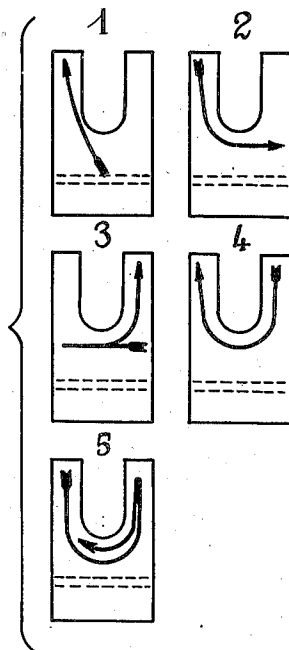


Fig. 6.



Inventor
Gabriel Tricau
by *Glascok, Downing & Seebold*
Attorneys

UNITED STATES PATENT OFFICE

2,052,503

PARACHUTE

Gabriel Tricau, Paris, France

Application December 5, 1934, Serial No. 756,094
In Luxemburg December 8, 1933

9 Claims. (Cl. 244—21)

This invention relates to parachutes, and it has particular relation to parachutes of the type which are enclosed, in period of non-utilization, in bags adapted to be carried by the users.

The bags of such parachutes were made heretofore in such a manner that, when they enclosed their sail and the shroud lines connecting the latter to the users, their thickness was too great and their weight was badly distributed on the user thus hindering his movements and causing him relatively great fatigue when he had to effect a definite work on board an aircraft whilst carrying his parachute. The sails of these parachutes once folded and enclosed in their bag could become packed, this being particularly prejudicious to their correct unfolding and sometimes causing accidents.

An object of the present invention is to remedy these inconveniences by providing bags for parachutes, which bags present a large bearing surface on the user's body at the same time as a large surface for receiving their sail which is so folded and arranged that it cannot become packed and cannot entangle with the shroud lines which are coiled in a special compartment.

With these and other objects in view, which will become apparent as the description proceeds, the invention consists of the novel features of construction, combination of elements and arrangement of parts hereinafter described and pointed out in the claims.

For a better understanding of the invention, reference may now be had to the accompanying drawings forming a part of this disclosure, wherein:—

Fig. 1 is a perspective view of an embodiment of the parachute, forming the subject-matter of the invention, such as it appears when carried by a user.

Fig. 2 is a perspective view of the bottom face of the parachute illustrated in Fig. 1.

Fig. 3 is a perspective view of a detail.

Fig. 4 is a perspective view of the bag open.

Fig. 5 is a perspective view of another detail.

Fig. 6 is an elevation of the free end of a lace.

Fig. 7 is a view showing a series of diagrams illustrating the various phases of the folding operations of the sail.

The bag for parachute illustrated in the accompanying drawings comprises a bottom face and a top face.

According to the invention, the bottom face 1 is formed by a surface 2 extending over the user's back and comprising two extensions 3g and 3d respectively extending over each of the shoulders

and relatively low on the user's chest (Fig. 2).

This bottom face 1 can be made of any suitable material: rubberized canvas, leather, etc., and it can have, at suitable places, rigid means adapted to impart to said bottom face a certain rigidity. These rigid means can be constituted for instance by small metal blades enclosed in sheaths formed by a lining sewn on the bottom face of the bag.

The bottom face 1 of the bag is inwardly provided, at the lower part, above the place corresponding to the user's belt and transversely, with a strip 4, preferably resilient, which is sewn at its lower edge and at its side edges and thus forms a pocket opening at the upper part.

The bottom face 1 is also provided, on the one hand, at the lower part, at the user's waist and on either side, with a band 5 terminating at its free end in a fastening means 6 permitting attachment to the buckle of the user's belt for instance and, on the other hand, at the end of each of the extensions 3g and 3d, with a band 7 also terminating at its free end in a fastening means 6, adjustable in length and also allowing to attach it to the user's belt. The bands 5 and 7 each comprise a plurality of resilient strips 8 which impart a certain resiliency to the same, this allowing the bag of the parachute to perfectly fit the parachutist.

At the lower part of the bottom face 1, below the strip 4, are secured resilient strips 9, transversely arranged and adapted to hold the shroud lines when the latter are coiled.

An opening 30 is also provided at this place in the bottom face of the bag for allowing the passage of the shroud lines.

The top face of the bag is constituted by a set of movable surfaces which are made integral with the bottom face 1 of the bag on its two lateral sides. This set of movable surfaces comprises, on the one hand, two large flaps 10 which form the portion of the top face corresponding to the dorsal portion of the bag, these flaps 10 being each secured, at one of their sides, to one of the lateral sides of the bottom face of the bag, and, on the other hand, four small flaps 11g and 11d which form the top portion corresponding to the two extensions of the bottom face of the bag, these flaps 11 being secured per pair, at one of their sides, to one of the lateral sides of the bottom face of the bag.

A turned down portion 12, secured to the lower edge of the bottom face of the bag, and turned down portions 13 secured to the inner edges of the extensions of the bottom face of the bag and

to the ends of these latter ensure the fluid-tightness of the bag when it is closed.

The flaps 10 and the flaps 11g and 11d, as well as the turned down portions 12 and 13 are provided, on the one hand, along their meeting edges and near the latter, with hooks 14 or with metal eyelets allowing to secure them together when closing the bag and, on the other hand, with resilient strips 15 transversely arranged and constantly tending to cause the said flaps 10, 11g and 11d and turned down portions 12, 13 to fold outwardly upon opening the bag.

One of the flaps 11g and 11d, preferably one of those which are arranged at each of the ends of the extensions 3g and 3d of the bag, are externally provided with a small pocket also constituted by four small flaps 16 for instance, the said pocket being adapted to contain the "extracting parachute."

The flaps 16 are each provided, at their end, with a buckle 17 allowing to attach them together, by a rip cord, upon closing, and with resilient strips 18 transversely arranged for facilitating the opening.

The sail of the parachute, which is to be contained in a bag such as described above, is arranged in the latter in the following manner: It is first folded in spindle shape in the known manner, and this in such a way that after folding it has at its leading edge a width equal to that of the bag which is to receive it. The leading edge of said sail is then placed in the pocket formed by the resilient strip 4; the shroud lines are taken out of this pocket and coiled in the lower part of the bag where they are held by the resilient strips 9, the loop formed by the shroud lines projecting outside the bag through the opening 30 provided in the bottom face of the latter and receiving the parachutist's belt. The sail is then spread out on the bottom face of the bag up to the end of one of the extensions of the bottom face of the latter, folded on itself and brought downwardly on the top of the pocket formed by the resilient strip 4, then folded again on itself and spread out up to the end of the other extension of the bottom face of the bag, then once again folded on itself and spread out circularly at the neck portion. The same series of operations, shown in the diagrams of Fig. 7, is then repeated until the entire sail has been housed in the bag.

The flaps 10 are then connected together and to the turned down portion 12 by lacing two laces 19 (Fig. 1) each constituted by a small sandow and one of the ends of which is secured to the turned down portion 12 for instance, whereas the other end, which terminates in an end piece 20 provided with an eye is held stationary by a fastening cord 21 forming a loop.

The flaps 11g and 11d are connected to the turned down portions 13 corresponding thereto and to the upper edge of each of the flaps 10 also by laces 22g and 22d and 23g and 23d, one of the ends of all these laces being secured to the said flaps or to the said turned down portions, whilst their other end also terminates in an end piece 20 provided with an eye in which the fastening cord 21 passes.

Thus, the same fastening cord holds all the end pieces of the laces. Two fastening cords might be employed, one of which would be left rather loose in order to avoid untimely opening.

It is to be noted that, upon lacing, said laces are tightly stretched so as to come out of the hooks 14 when the cord 21 is broken.

The "extracting parachute" is enclosed in the pocket formed by the flaps 16, the latter being subsequently connected together by a cord 24 passing in the buckles 17.

The "extracting parachute" is connected, in the usual manner, by a cable of suitable length, to the top of the sail, and it is also connected to a strap to which are secured the ends of cables, preferably of different length, which actuate cutters 25 so arranged as to cut the fastening cord 21. Two cutters actuated, one by the cable automatically initiating the opening operation, the other by the cable initiating, under control, the opening operation, are so arranged that they can cut the cord 24.

These two cables might obviously directly control the cutters 25 adapted to cut the cord 21.

When a pull is exerted on either of these two cables, the cord 24 is broken and the pocket formed by the flaps 16 opens: the extracting parachute is released.

The latter is caught by the wind, unfolds and causes all the cutters 25 to act for cutting the cord 21. The laces 19, 22g and 22d and 23g and 23d, owing to their resiliency, retract and release the flaps, this causing the bag to open and allowing the sail to be released and to unfold.

It is to be understood that the cutters 25 can be actuated by the two cables having an automatic and controlled action and also by the small extracting parachute, these three means for cutting the fastening cord can be assembled together or separately.

This bag therefore presents a very large surface bearing on the user's body and ensures a suitable distribution of the weight of the unit: bag, sail, shroudlines, etc. Moreover it has a very small thickness and does not cause any discomfort, whilst ensuring a certain and positive opening at the time the parachute is used.

As the bands 5 and the bands 7 are connected by their ends to the buckle of the belt of the parachutist, the latter, upon landing, discards the whole in the usual manner by acting on the buckle of his belt.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A parachute bag comprising a bottom made up of a portion designed to rest upon the back of the user and extensions designed to pass over the shoulders and relatively low on the chest of the user; flaps carried by the bottom and designed to overlie the whole of the bottom when folded thereover; and means for releasably connecting the flaps to each other to define with the bottom a parachute bag coextensive with the bottom.

2. A parachute bag comprising a bottom made up of a portion designed to rest upon the back of the user and extensions designed to pass over the shoulders and relatively low on the chest of the user; flaps carried by the bottom and designed to overlie the whole of the bottom when folded thereover; and means for releasably connecting the flaps to each other to define with the bottom a parachute bag coextensive with the bottom, the flaps carried by one of the extensions being formed to provide a pocket for receiving a small extracting parachute.

3. A parachute bag comprising a bottom made up of a portion designed to rest upon the back of the user and extensions designed to pass over the shoulders and relatively low on the chest of the user; flaps carried by the bottom and designed to overlie the whole of the bottom when

folded thereover; and means for releasably connecting the flaps to each other to define with the bottom a parachute bag coextensive with the bottom, the flaps carried by one of the extensions being formed to provide a pocket for receiving a small extracting parachute, disposed forwardly on the extension.

4. A parachute bag comprising a bottom made up of a portion designed to rest upon the back of the user and extensions designed to pass over the shoulders and relatively low on the chest of the user; flaps carried by the bottom and designed to overlie the whole of the bottom when folded thereover; and means for releasably connecting the flaps to each other to define with the bottom a parachute bag coextensive with the bottom, bands extending from the free end of each extension and from the sides of the back portion of the bottom and carrying means for attachment thereof to the belt of the user.

5. A parachute bag comprising a bottom made up of a portion designed to rest upon the back of the user and extensions designed to pass over the shoulders and relatively low on the chest of the user; flaps carried by the bottom and designed to overlie the whole of the bottom when folded thereover; and means for releasably connecting the flaps to each other to define with the bottom a parachute bag coextensive with the bottom, the back portion of the bottom being provided with an aperture for reception of the shroud lines passing from within the bag to the belt of the user.

6. A parachute bag comprising a bottom made up of a portion designed to rest upon the back of the user and extensions designed to pass over the shoulders and relatively low on the chest of the user; flaps carried by the bottom and designed to overlie the whole of the bottom when folded thereover; and means for releasably connecting the flaps to each other to define with the bottom a parachute bag coextensive with the bottom, an upwardly opening pocket disposed transversely at a point spaced from the lower edge of the back portion of the bottom.

7. A parachute bag comprising a bottom made up of a portion designed to rest upon the back of the user and extensions designed to pass over the shoulders and relatively low on the chest of the user; flaps carried by the bottom and designed to overlie the whole of the bottom when folded thereover; and means for releasably connecting the flaps to each other to define with the bottom a parachute bag coextensive with the bottom, an upwardly opening pocket disposed transversely at a point spaced from the lower edge of the back portion of the bottom, separating the bag into a sail holding and a shroudline holding compartment.

8. A parachute bag comprising a bottom made up of a portion designed to rest upon the back of the user and extensions designed to pass over the shoulders and relatively low on the chest of the user; flaps carried by the bottom and designed to overlie the whole of the bottom when folded thereover; and means for releasably connecting the flaps to each other to define with the bottom a parachute bag coextensive with the bottom, an upwardly opening pocket disposed transversely at a point spaced from the lower edge of the back portion of the bottom, the back portion of the bottom being provided with an aperture opening into the shroudline compartment permitting passage of the shroudlines from the bag to the belt of the user.

9. In combination, a parachute bag made up of a back portion and extensions designed to pass over the shoulders and relatively low on the chest of the user, an upwardly opening pocket dividing the bag into a sail holding and a shroudline compartment, an aperture in the back portion opening into the shroudline compartment for passage of the shroudlines from the bag to the belt of the user, bands extending from the free end of each extension and from each side of the back portion and carrying means for attachment thereof to the belt of the user, and a pocket located in one of the extensions for reception of a small extracting parachute.

GABRIEL TRICAU. 45