C. A De Liancourt.

Life Preserver.

No. 3,584. Patented May. 10, 1844.

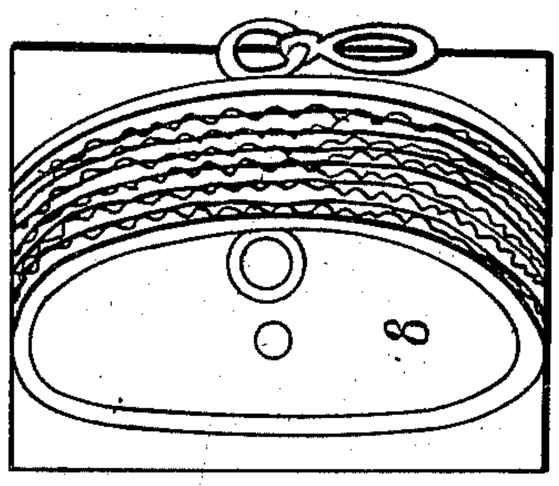

Fig. 4.

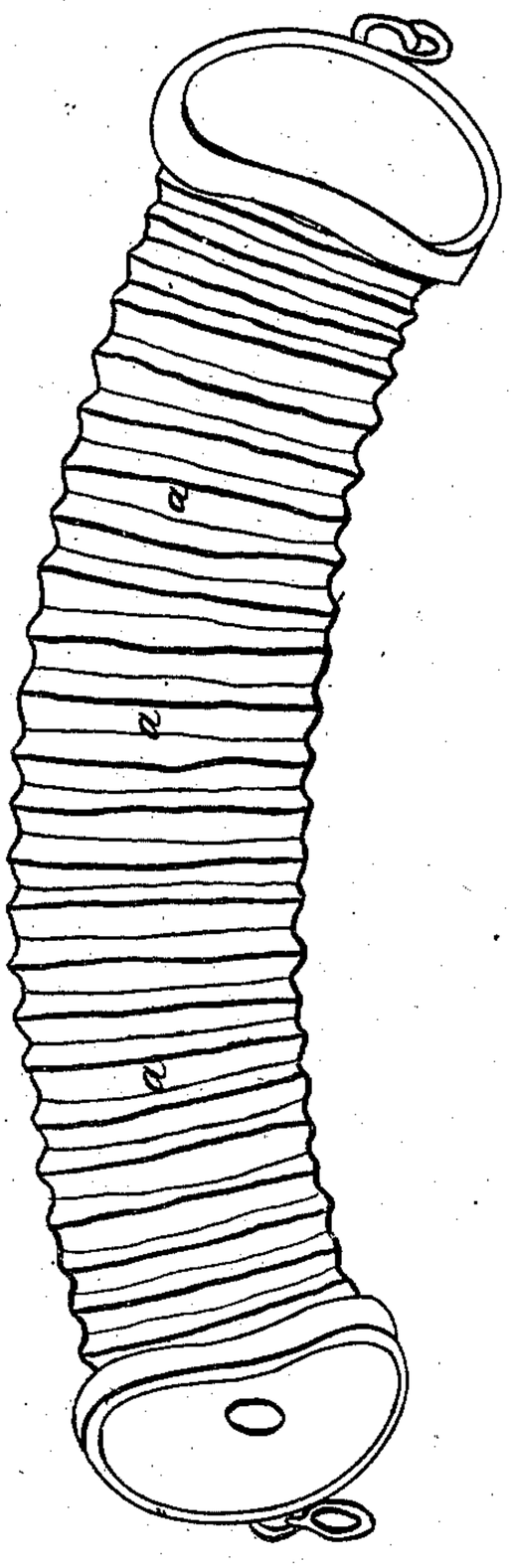

Fig. 1.

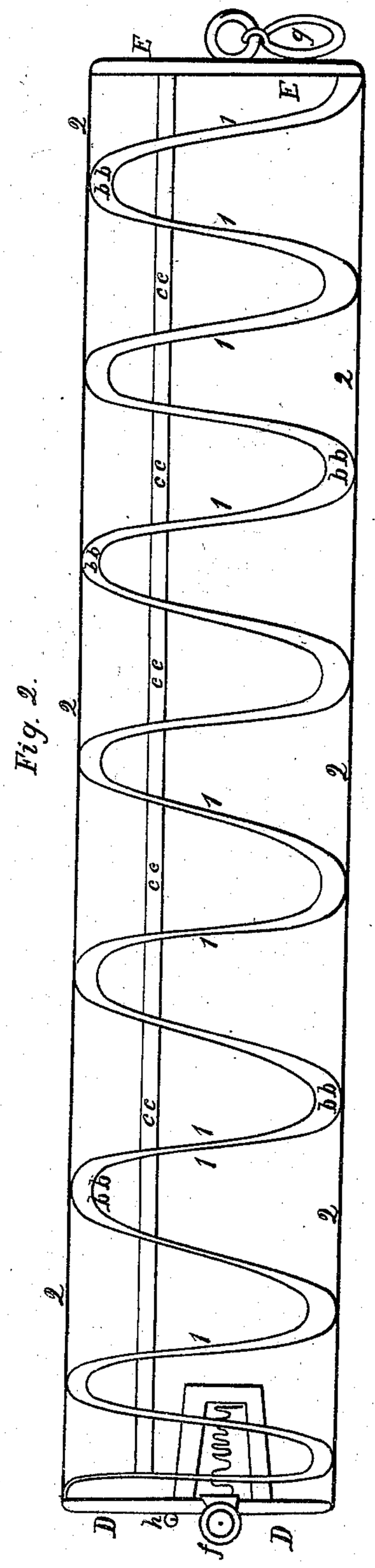

Fig. 2.

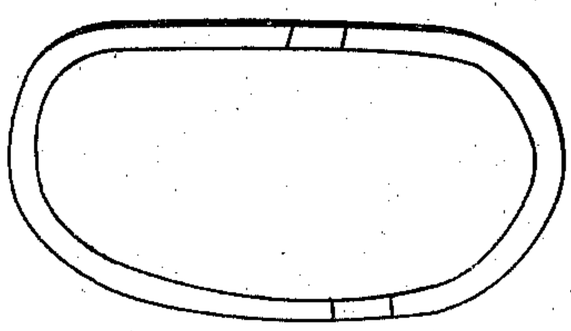

Fig. 3.

UNITED STATES PATENT OFFICE.

CALLISTUS AUGUSTUS DE LIANCOURT, OF PARIS, FRANCE, ASSIGNOR TO JOSEPH FRANCIS, OF NEW YORK, N. Y.

IMPROVEMENT IN LIFE-PRESERVERS WHICH ARE ALSO APPLICABLE AS BUOYS, RAFTS, AND OTHER PURPOSES.

Specification forming part of Letters Patent No. **3,584**, dated May 10, 1844.

To all whom it may concern:

Be it known that I, CALLISTUS AUGUSTUS DE LIANCOURT, of the city of Paris, a citizen and resident of the Kingdom of France, have invented and made certain new and useful Improvements in the Mode of Constructing Life-Preservers of Different Sizes, both for personal use and which are intended to be competent for employment as buoys, rafts, and for other purposes, and to be more portable than those generally made, and more certain and independent of extraneous in their operation, by maintaining the form when in use and in danger through the effect of internal metal or other springs or rings within an exterior case, which case it is not a matter of necessity to have always air-tight, the heads or ends being formed of thin metal or other material with flanges on the edges whereon to secure the ends of the exterior case, all which I call the "Liancourt Nautilus," and for which improvements I seek Letters Patent within the United States; and I do hereby declare that the said improvements and the mode of constructing and using the same, and the advantages thereof, are fully and substantially set forth and shown in the following description and in the drawings annexed to and making a part of this specification, wherein—

Figure 1 represents a Liancourt nautilus or life-preserver finished and ready for use. Fig. 2 is the internal frame or skeleton. Fig. 3 is one head or end. Fig. 4 is the opposite end. These are detached to show the method of forming them, and the same letters as marks of reference apply to the same parts in all the figures.

a is an air-bag, of any flexible cloth, extended over *b b*, a helical metal spring or spiral, or rings of either metal, wood, whalebone, or any other material, so fitted or made that it shall assume and retain sectionally the form of an ellipse somewhat flattened on one side, and of a sufficiently elastic stiffness to resist a considerable external force. This helical spring is to be kept from being extended too much when in use by a web, tape, ribbon, or braid *c c*, sewed in one or more lengths on the fakes of the spring in gaged distances that regulate the extent of its length, and the external bag or cover *a* being sewed to the gage-tapes *c c* the whole forms a sort of elliptic cylinder flattened on one side, and the ends of the spring are now to be secured in any convenient manner to the heads *d* and *e*, so that the ends of the exterior bag or case *a* may be secured on, in, under, or round the flanges on the heads *d* and *e*. The head *d* is provided with a hole *f*, in which a small valve fits, opening inward, and shuts by a spring on the inside of the head.

The bag or covering *a* is to be made of water-proof flexible material, covered or saturated with paint or oil, or any unctuous compound that will resist water and dry sufficiently for use without becoming so hard as to break the material of the bag. The head *e* is to be fitted with a small chain-hook *g* to hook in an eye *h* in the head *d*, or any other fastening may be used. When thus prepared, it will be seen that on any force acting to increase the distance between the heads *d* and *e* the valve at *f* will open and allow the air to fill the internal space, and in this condition if placed with the flat side next the body and hooked or fastened round a person in the water the continuance of the buoyant power of the bag does not depend on the elastic force of the air within the bag; but the power is sustained by the spring retaining or maintaining the form of the bag, which it will do even against considerable violence, and while the form of the bag is so sustained it is not absolutely necessary that it should be entirely air-tight and water-tight, as the air within will keep the water out, even if there be numerous small holes at the parts where the threads forming the cloth cross each other, while one such hole is fatal to all other life-preservers, the distension of which depends on the air within them. On the contrary, if even a small rent be made in one of these described herein the tying a handkerchief round the part will renew the efficiency of the instrument.

The materials used throughout and the form of the helical spring may be varied for any purpose, and the size and form of the instrument herein described may be increased or decreased to suit any use. When made as a life-preserver belt for personal use, the flat-

tened ellipse may be about five inches wide by three and one-half inches thick, the spring about one-sixteenth of an inch thick by three-sixteenths or one-fourth of an inch wide, shaped to stand edgewise, and painted or varnished to prevent rust. When made to use as buoys, rafts, or for other heavy purposes, the internal springs, the ends, and the cover may all be changed both in size and material to suit the intended purpose, still maintaining the herein-described mode of construction which gives and maintains the form of the instrument when in use.

To render this instrument more portable, the bag or cover is made to fold inward between the rings or the fakes of the helical spring, so that a man may carry a life-preserver for personal use in his coat-pocket.

What I claim as new and of my own invention, and desire to secure by Letters Patent, is—

The making of life-preservers, buoys, rafts, and other articles for buoyant purposes by distending the air-bag with a helical spring or with separate hoops or rings of iron or other metal, whalebone, or any kind of wood covered with any suitable or proper flexible material, and in combination with this the mode of making and attaching ends of any proper material, one of which is provided with a valve, by which arrangement the permanent elastic force or stiffness of metal or other material used for distending the bag is substituted for the uncertain elastic force of air, substantially in the manner described.

CALLISTUS AUGUSTUS DE LIANCOURT. [L. S.]

Witnesses:
JOSEPH MARQUETY,
WILLIAM EWING,
Clerks in the Consulate of the United States at London.