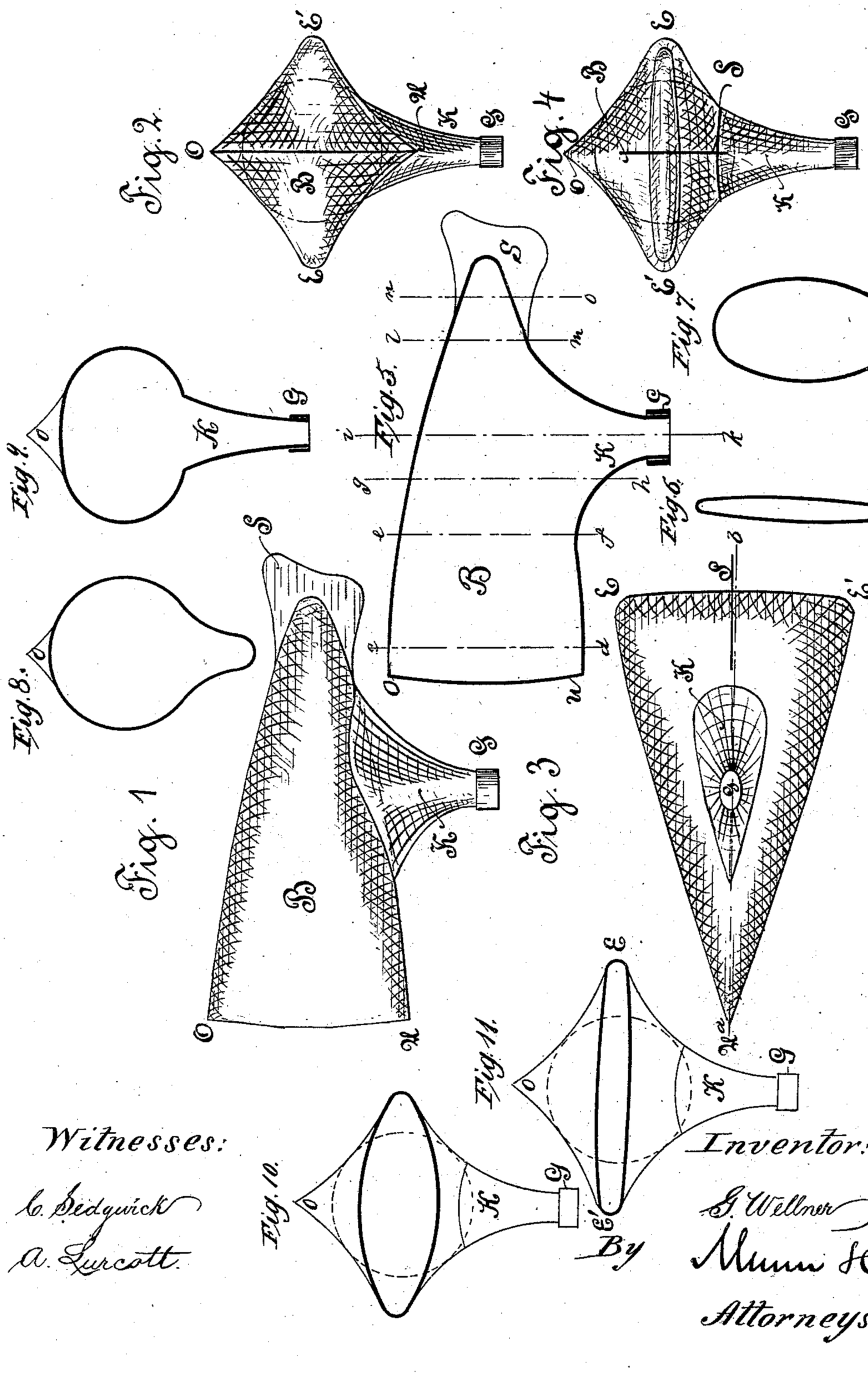
(No Model.)

G. WELLNER.

WEDGE SHAPED AIR BALLOON.

No. 308,719. Patented Dec. 2, 1884.



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GEORGE WELLNER, OF BRÜNN, AUSTRIA-HUNGARY.

WEDGE-SHAPED AIR-BALLOON.

SPECIFICATION forming part of Letters Patent No. 308,719, dated December 2, 1884.

Application filed May 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WELLNER, of Brünn, Austria-Hungary, Europe, have invented a new and useful Improvement in Wedge-Shaped Air-Balloons, called "Fish-Balloons," of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved balloon which ascends and descends obliquely.

The invention consists in a balloon having a wedge shape with a vertical edge at the front end and a transverse edge at the rear end, the said balloon being provided with an inverted-cone-shaped projection on its belly, to which cone-shaped projection the car is fastened.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of my improved wedge-shaped balloon. Fig. 2 is a front end view of the same. Fig. 3 is a plan view of the under side of the same. Fig. 4 is a rear end view of the same. Fig. 5 is a section on line *a b*, Fig. 3. Fig. 6 is a section on line *c d*, Fig. 5. Fig. 7 is a section on line *e f*, Fig. 5. Fig. 8 is a section on line *g h*, Fig. 5. Fig. 9 is a section on line *i k*, Fig. 5. Fig. 10 is a section on line *l m*, Fig. 5. Fig. 11 is a section on line *n o*, Fig. 5.

The balloon B is made tapering from the vertical front edge, O U, to the opposite end, E. The car, of any desired form, is to be suspended in any suitable manner from the lower end, G, of a downwardly-projecting inverted-cone-shaped part, K, formed on the bottom of the balloon, and through the openings in the end G of the said inverted-cone-shaped part K the balloon is to be filled. A vertical rudder-blade, S, is fastened on the balloon at the rear end. The plan of the balloon consists of a triangle with the front at the front edge line, O U, and the base line at the rear point, E.

The balloon consists of a cylinder flattened at the front to form a vertical edge and flattened at the rear to form a horizontal transverse edge, the balloon retaining its circular cross-section at the middle, as shown in Figs. 2 and 3. The front vertical edge, O U, of the balloon cuts the air as the balloon passes through it. The top or back of the balloon naturally has a triangular shape. From the point O it is gradually rounded to about its middle, and is then gradually flattened toward the rear end, E E, of the balloon. The belly is shaped in a similar manner, and is provided with the inverted-cone-shaped part K, as previously described. The body of the balloon is filled with light gas or with heated air, which can be produced by means of a stove in the car. The cone-shaped part K is usually filled with air. When the balloon rises, the air coming from above presses against the back or top surface of the balloon and produces a propelling force component, so that the balloon will not be borne upward vertically, but obliquely. If the balloon descends, the air below it strikes the slanting belly and prevents the balloon from descending vertically and causes it to descend obliquely. A wave-like flight is caused by alternate rising and sinking of the balloon. The edge O U of the balloon must always be to the front. The back or top and the belly surfaces of the balloon operate like sails with an artificial wind produced by alternating ascending and descending of the balloon.

By means of the stove in the car the air in the balloon can be heated to a greater extent at intervals, so that the balloon will alternately rise and fall; or this rising and falling can be produced by other suitable means.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A balloon made in the shape of a wedge, having a vertical edge at the front and a transverse edge at the rear end, substantially as herein shown and described.

2. A balloon made in the shape of a wedge, having a front vertical edge, a rear horizontal transverse edge, and an inverted-cone-shaped part on its bottom, substantially as herein shown and described.

3. The combination, with a balloon made in the shape of a wedge and having a vertical front edge, a horizontal transverse rear edge, and an inverted-cone-shaped lower portion, of a vertical rudder-blade at the rear end, substantially as herein shown and described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE WELLNER.

Witnesses:
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