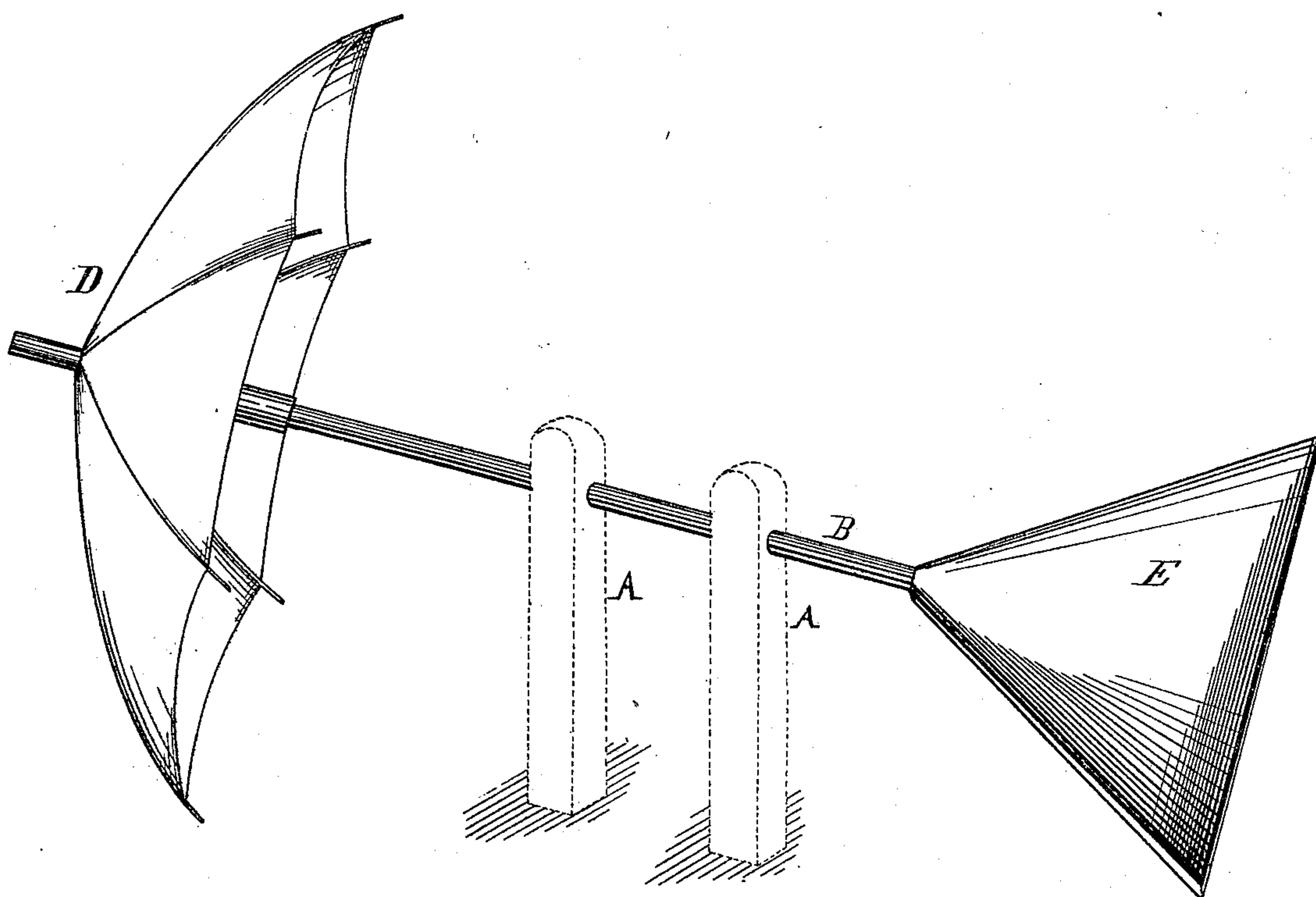


D. H. CARL.

PROPELLING AND STEERING BALLOONS

No. 175,662.

Patented April 4, 1876.



WITNESSES-

Chas. C. Gill
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UNITED STATES PATENT OFFICE.

DANIEL H. CARL, OF GREENWICH, OHIO.

IMPROVEMENT IN PROPELLING AND STEERING BALLOONS.

Specification forming part of Letters Patent No. **175,662**, dated April 4, 1876; application filed January 27, 1876.

To all whom it may concern:

Be it known that I, DANIEL H. CARL, of Greenwich, in the county of Huron and State of Ohio, have invented a new and useful Improvement in Devices for Propelling and Steering Balloons, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to certain improvements in devices for propelling and steering balloons; and consists in the parts as hereinafter specifically designated.

Figure 1 is a perspective view of a device embodying the elements of the invention.

In the accompanying drawings, A represents the standards, secured to each end of the car, and having their upper ends provided with apertures, through which the bar B is placed in such manner as to allow it a free and easy horizontal movement. Such is the position of the shaft when it is desired to propel the balloon by means of machinery, any number of shafts preferred being used. To each end of the shaft, and, if convenient, at regular intervals between its ends, is secured an umbrella-shaped device, D, which propels the balloon, the umbrella being constructed of some material having a very close and compact texture, and not easy to tear. The rudder or wing E is constructed by covering a bowed triangular frame, made of heavy wire or analogous material, with any suitable fabric desired, or some other efficient material. The rudder E is designed to be held in the hand or attached, by a ring or otherwise, to the side or some convenient location of the balloon, and operated, in the latter instance, by a rope, chain, or other desirable means, so as to guide the balloon on the same plan that a rudder guides a boat. Of the efficiency of this device there is no question.

When it is desired to operate the shaft B by hand the standards A are dispensed with,

and also all of the umbrellas but one, it being secured upon the forward end of the shaft, the other end of which may be provided with a handle, or otherwise suitably formed to facilitate the operator in his endeavors to navigate the balloon. The wing or rudder E may also, if desired, be dispensed with when driving the device by hand, as the operator can, by suddenly thrusting the umbrella forward and drawing it back, guide the balloon at will. It is obvious that when the shaft B is suddenly thrust forward the umbrellas will close, allowing a ready passage through the air, and when brought back the wind will open them. Thus the wind, filling the inside of the umbrella and blowing against it, will draw the balloon in that direction, while at the same time the wind, blowing against the wing, keeps the device in a proper course, the operator presenting the wing to the wind at different inclinations, according to the direction in which he wishes to travel.

It is obvious that the above-described device may be arranged in pairs or sets, as desired.

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

1. In a device for propelling balloons, the umbrella or umbrellas D, in combination with the shaft E, substantially as set forth.

2. A device for steering and propelling balloons, consisting of an umbrella or umbrellas and a wing or rudder, substantially as shown and expressed.

In testimony that I claim the foregoing improvement in devices for steering and propelling balloons, as above described, I have hereunto set my hand.

DANIEL H. CARL.

Witnesses:

HYATT TRAVIS,
J. B. HEALY.