T. L. SHAW.

BALLOON.

No. 37,667. Patented Feb. 10, 1863.

Fig 1.

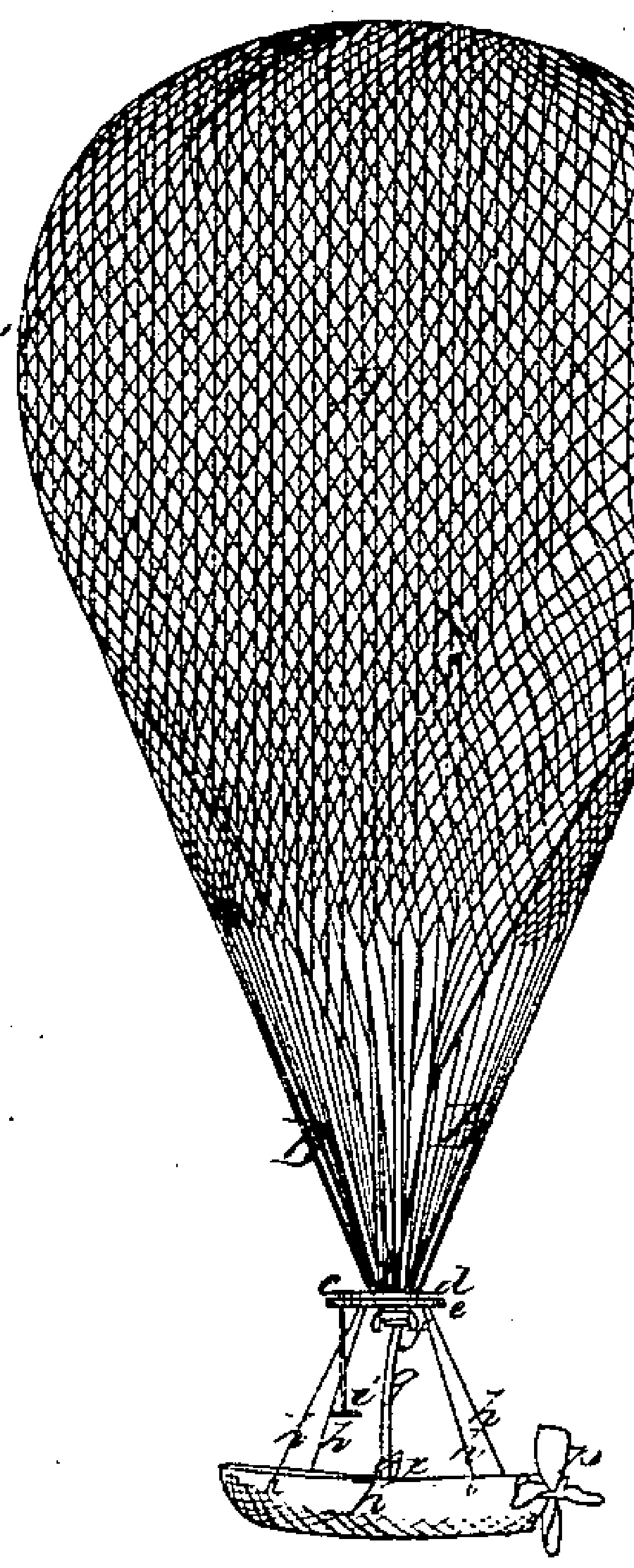


Fig 2,

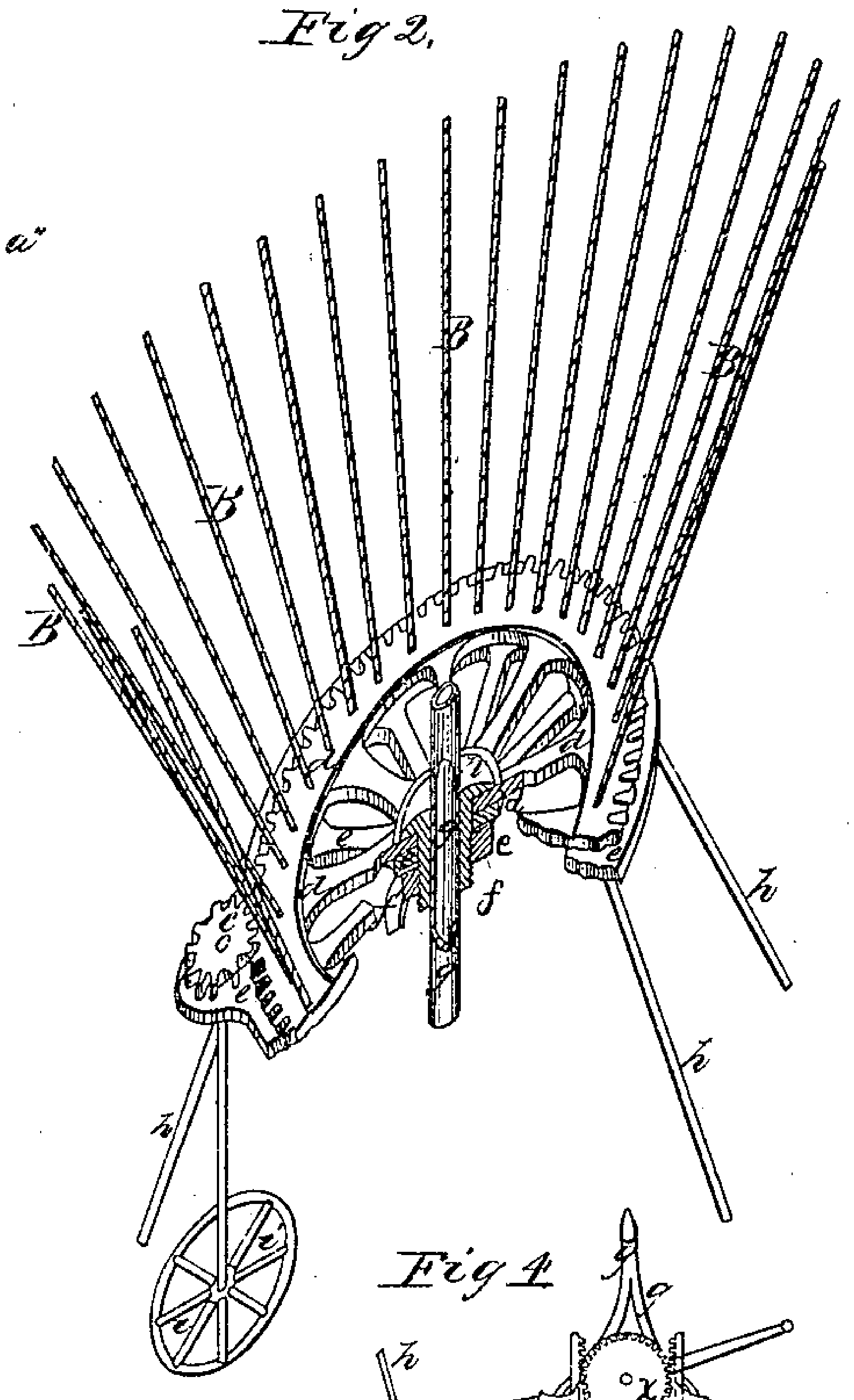


Fig 4

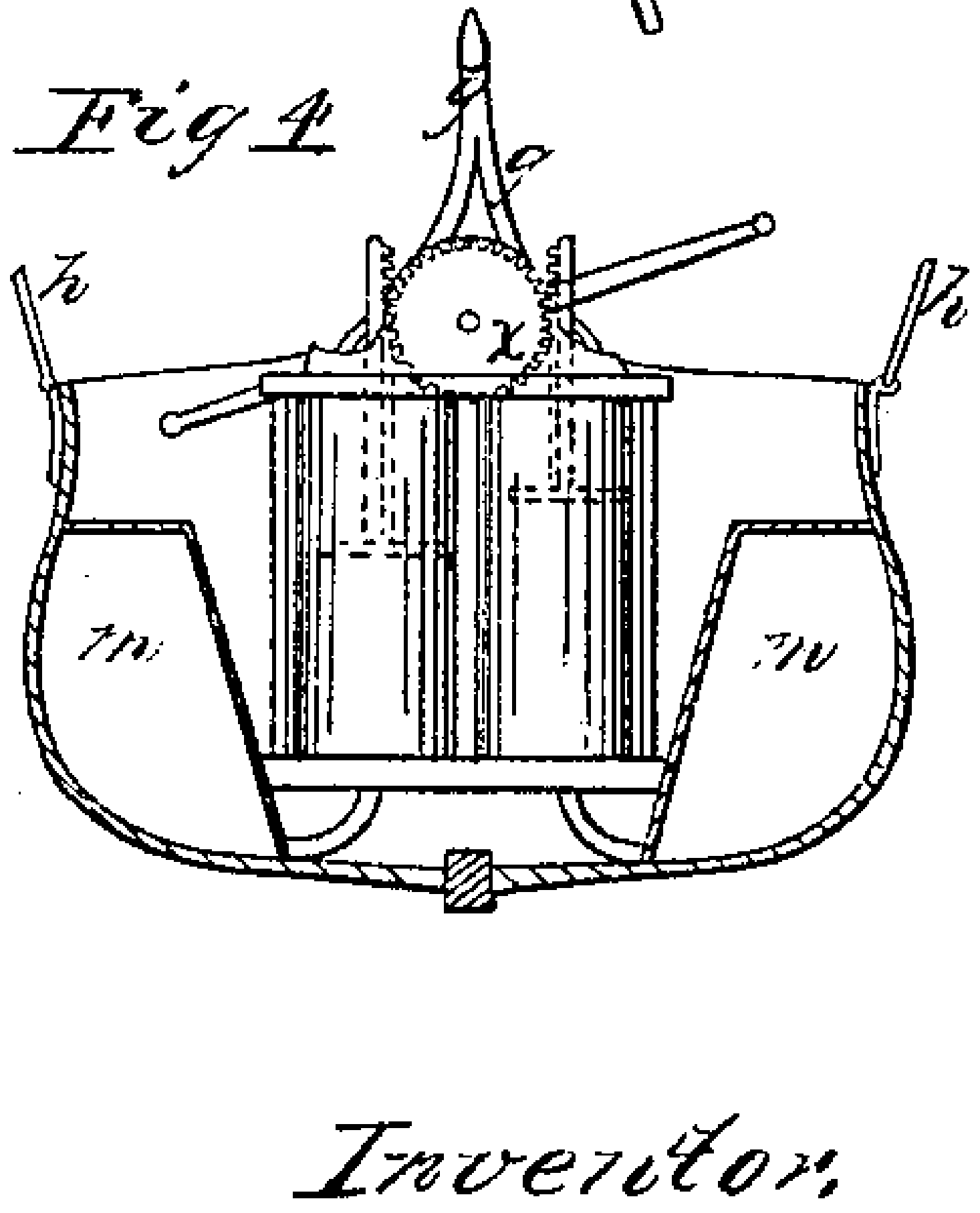
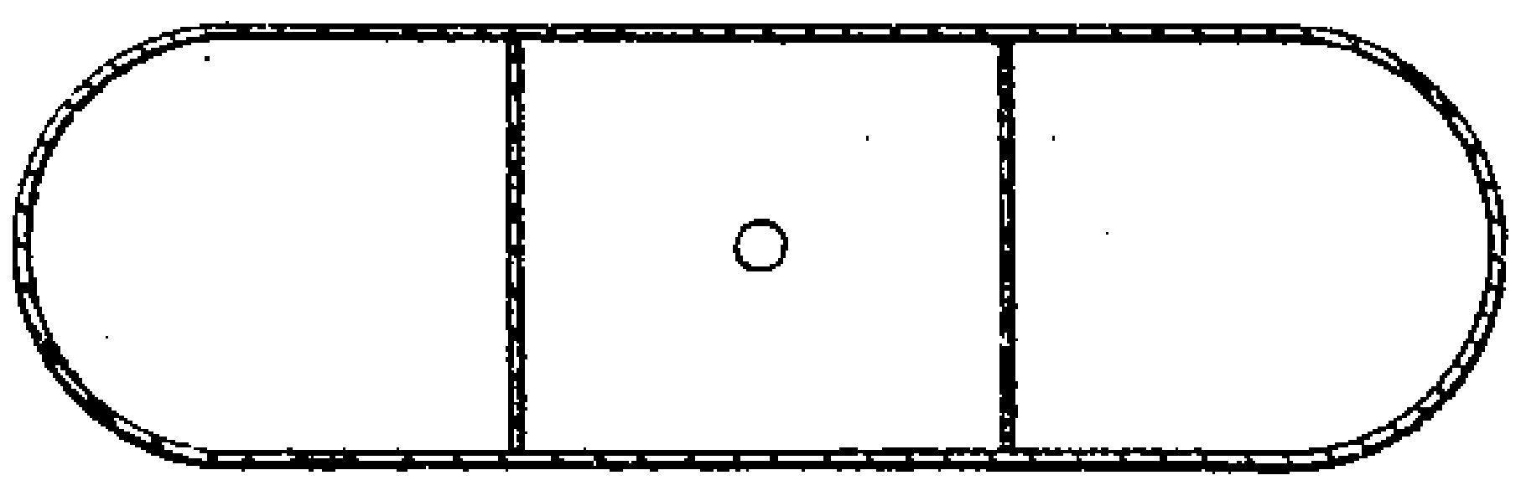


Fig 3,



Witnesses,
William E Harvey
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Inventor,
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UNITED STATES PATENT OFFICE.

THOMAS L. SHAW, OF OMAHA CITY, NEBRASKA TERRITORY.

IMPROVEMENT IN BALLOONS.

Specification forming part of Letters Patent No. **37,667**, dated February 10, 1863.

To all whom it may concern:

Be it known that I, THOMAS L. SHAW, of Omaha City, in the county of Douglas and Territory of Nebraska, have invented a new and Improved Mode of Navigating the Air; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, making a part of this specification.

The nature of my invention consists in making a balloon flat on two sides, connected with a car by cords or wires, but furnished with an apparatus for turning the balloon independent of the car, and by which the balloon can be immediately detached from the car, if necessity should require it, in a descent upon water or land; also, in having the car provided with gas-chambers sufficiently strong to hold a large quantity of compressed gas, the gas being withdrawn from the balloon and forced into the chambers by means of a force-pump if the aeronaut wishes to descend, or if he desires to ascend the gas may be returned to the balloon by means of pipes and valves properly arranged or through the gas-conductor, by which arrangement the necessity for the large quantity of ballasting heretofore required will be obviated, the whole to be moved through the air by a wheel with blades set at an angle like the ordinary propeller or by any other suitable means.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 represents the flattened balloon, which may be maintained in its proper shape by connecting the two sides with cords or by making the same in separate apartments, as shown by Fig. 3, which is a horizontal section through *a a*. B B represent the cords connecting the netting of the balloon and the turning apparatus; *c*, *d*, *e*, *f*, and *i*, the turning apparatus; *g*, the gas-conductors leading from the balloon to the gas-chamber; *h h*, the cords or wires by which the car is suspended at a proper distance beneath the balloon; K, the car, and *p* the propeller-wheel.

Fig. 2 is an enlarged view of the turning apparatus, in connection with the cords connecting it with the balloon. The hand-wheel *i* is used to operate the pinion *c*, whereby the position of the car is changed in order to steer in any course desired by the aeronaut, and that is done by revolving the balloon independently of the car. The wheel or plate *d* is operated by the pinion *c* for the purposes aforesaid. The plate *e* receives the cords or wires *h h* by which the car is suspended, and is connected with the plate or wheel *d* by a hollow screw, *n*, and in case of necessity by the unscrewing of the nut *f* the balloon becomes at once detached from the car.

Fig. 3 is a horizontal section through *a' a''* of the balloon in Fig. 1, showing the form in which the same may be made in separate apartments to secure the flattened shape of the same; and this manner of construction, it is claimed, will afford protection to the aerial voyager in case of accident, such as the bursting of any part of the balloon or its being pierced with a ball. In this construction of the balloon there must be a gas conductor from each separate apartment to the gas-chambers.

Fig. 4 represents a cross-section of the car or boat, in the sides or ends of which the gas-chambers *m m* may be placed, as will be most convenient. The force-pump *x* is used to withdraw the gas from the balloon and to force it into the chambers *m m*, and by the proper construction of valves and pipes it is returned to the balloon as occasion may require.

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

A balloon constructed, arranged, and operated substantially in the manner described.

THOMAS L. SHAW.

Witnesses:
WILLIAM E. HARVEY,
DAN. GANTT.