

No. 751,082.

PATENTED FEB. 2, 1904.

E. LAYTON.

PROPELLING AND STEERING APPARATUS FOR BALLOONS.

APPLICATION FILED JUNE 29, 1903.

NO MODEL.

Fig. 1.

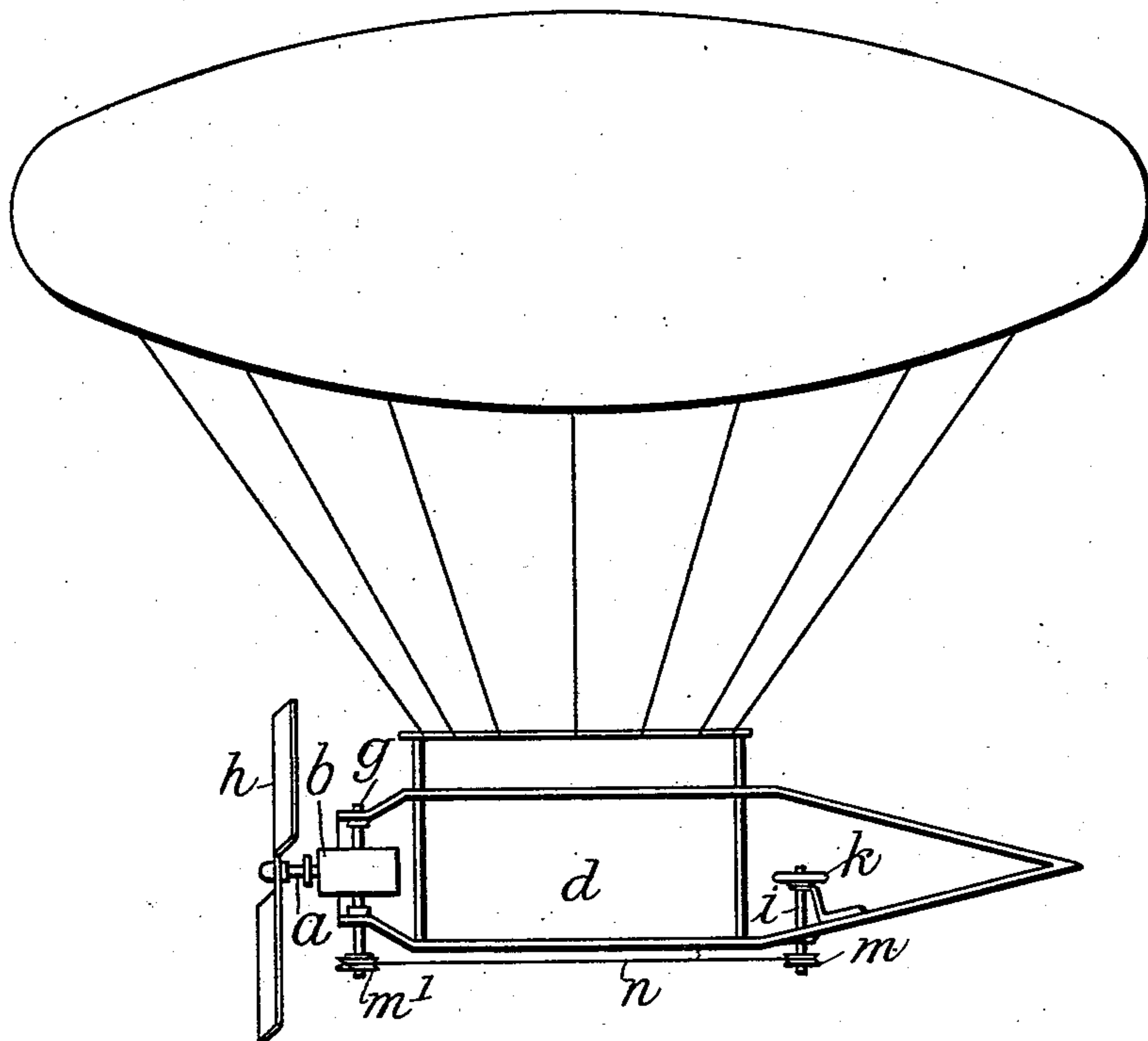
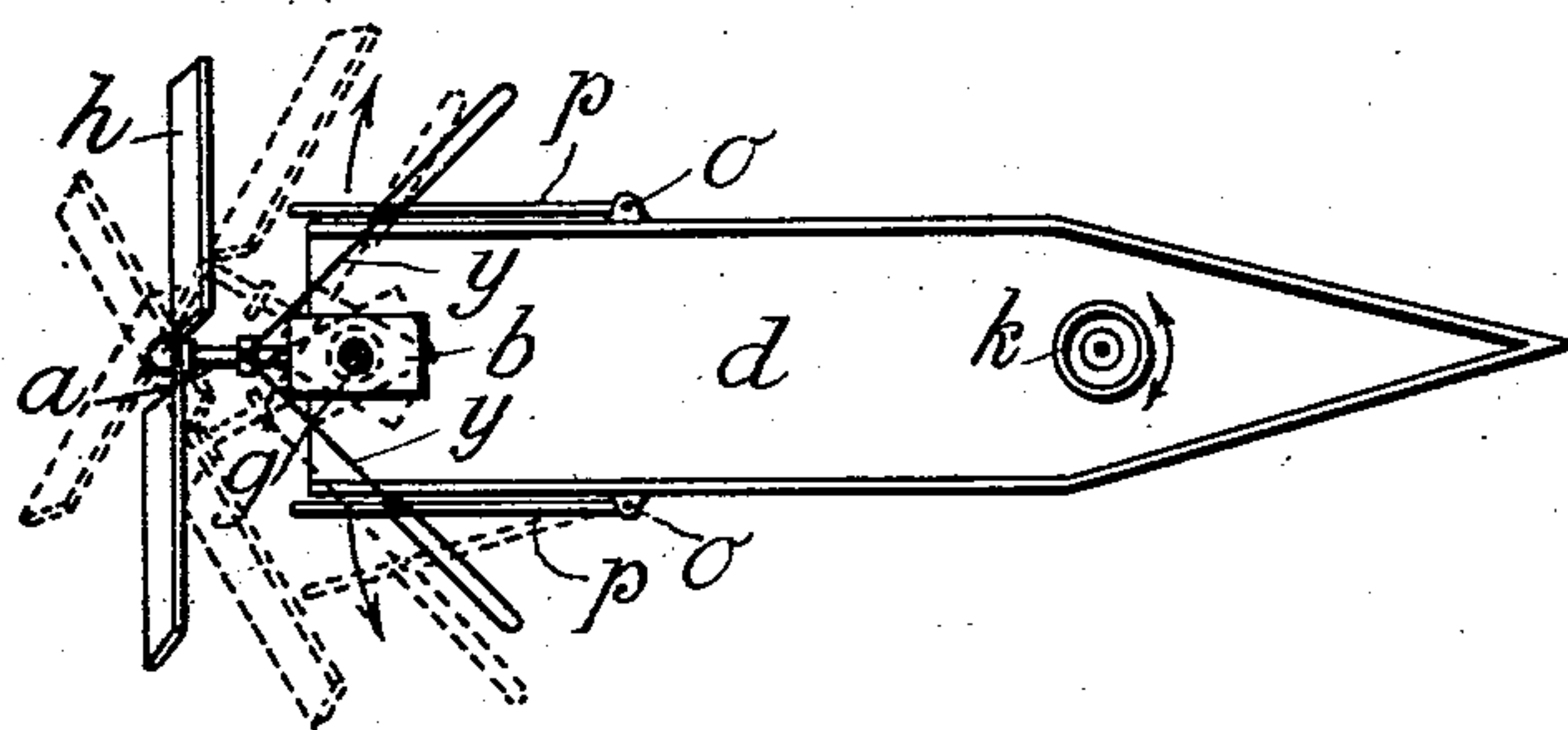


Fig. 2.



WITNESSES.

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PROPELLING AND STEERING APPARATUS FOR BALLOONS.

SPECIFICATION forming part of Letters Patent No. 751,082, dated February 2, 1904.

Application filed June 29, 1903. Serial No. 163,633. (No model.)

To all whom it may concern:

Be it known that I, EDWIN LAYTON, a citizen of the United States of America, residing at Lepes-utza, Haus Baruch, Gyula-Fehervar, Austria-Hungary, have invented certain new and useful Improvements in Propelling and Steering Apparatus for Balloons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a propelling and steering apparatus for balloons which is easily managed and enables the direction of the balloon to be altered as required and in case of necessity very quickly.

In the accompanying drawings, Figure 1 is an elevation of the balloon, and Fig. 2 a plan of the car.

In order that the balloon may not be unnecessarily weighted by the propelling and steering device, but all actions requisite for the propulsion and steering be effected with the simplest possible means, and consequently the management of the balloon be made quite easy, the motor *b*, which directly actuates the screw-shaft *a*, is pivoted outside the back part of the car *d* to oscillate horizontally around the shaft *g*, so that by suitably turning the motor about its pivots the driving-screw *h* can be adjusted at an angle in relation to the direction in which the balloon may be traveling, and thus be simultaneously employed for steering purposes.

The rotary motion of the motor *b* is effected through the medium of the hand-wheel *k*, provided in the front part of the car, the shaft *i* of this wheel carrying a chain-wheel *m*, which is connected through the chain *n* with a chain-wheel *m'* on the shaft *g*, so that the motor is readily turned on its pivots, turning the propeller to the right or left to effect the steering.

In consequence of the motor being arranged outside the back part of the car *d* the motor can be rotated around its vertical axis to such an extent that the steering and propelling screw can be adjusted at a considerable angle—in certain cases at a right angle—to the direction of travel, and thus the direction of the balloon be quickly altered. The effectiveness of the steering operation is, moreover, increased by the arrangement of steering-vanes *p* on the sides of the car *d*. These vanes are pivoted at *o* and so connected with the screw-shaft *a* by means of rods *y* that when the screw-shaft is subjected to lateral displacement the corresponding steering-vane is moved outward from the car *d*, Fig. 2, and thereby suitable resistance presented to the wind on that side. In order that the opposite vane may retain its position when the other is displaced, the rods *y* are connected, by means of slotted guides, with the steering-vanes *p*.

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

A propelling and steering device for balloons, comprising rotary propeller-blades, a motor mounted outside the car and acting directly on the propeller-shaft, vertical pivots about which the motor and propeller are mounted to turn horizontally to effect the steering, means for oscillating the motor with the said pivots, vanes pivoted on opposite sides of the car, and rods connecting the vanes with the propeller-shaft and adapted to operate the vanes to assist in steering the balloon, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

EDWIN LAYTON.

Witnesses:

GUSTAV SINGERHEUT,
FRANK DYER CHESTER.