H. MARUI.

AERIAL TOY.

APPLICATION FILED JAN. 10, 1918.

Patented Jan. 21, 1919.

1,291,991.

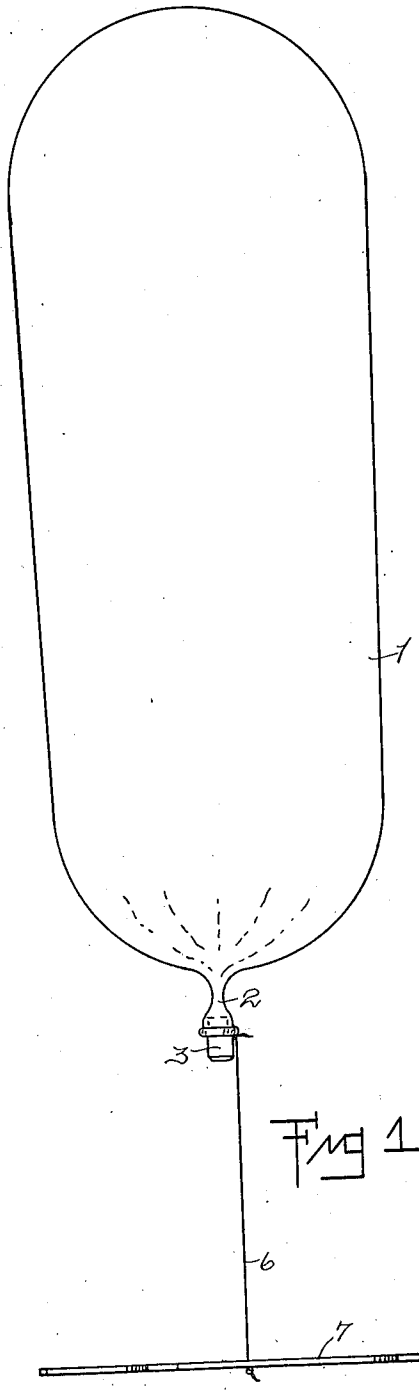


FIG 1

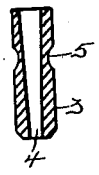
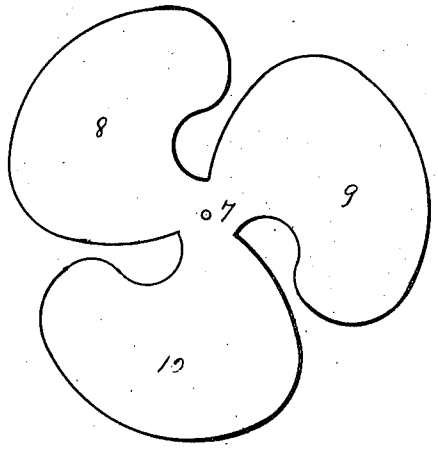


FIG 2

FIG 3



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AERIAL TOY.

1,291,991. Specification of Letters Patent. Patented Jan. 21, 1919.

Application filed January 10, 1918. Serial No. 211,127.

To all whom it may concern:

Be it known that I, HYOKICHI MARUI, a subject of the Emperor of Japan, and resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Aerial Toys, of which the following is a specification.

This device is a development or addition to the ordinary toy balloon, and has for its principal object the provision of a means which will cause the balloon to travel upward at a high rate of speed when the air is allowed to discharge therethrough.

The provision of a rapidly revolving propeller not only makes the accomplishment of the object possible, but also adds materially to the attractiveness of the device or toy.

The following is what I consider a good means of carrying out my invention, and the accompanying drawings should be referred to for a complete understanding of the specification which follows.

In the drawings:—

Figure 1 is an elevation of a complete device in condition for operation.

Fig. 2 is a sectional view of the air-nozzle, and

Fig. 3 a plan of the propeller.

Similar reference numerals indicate like parts in all of the figures where they appear.

The balloon 1 shown in Fig. 1 may be of any desired shape or size, and may be constructed similar to the well-known toy balloon, which is formed of india rubber, at one end of which is provided a nipple or air-inlet 2.

In the nipple 2, I place an air-nozzle 3, which may be formed of wood, or metal, and it will be noted that unlike ordinary toy balloons, I do not provide a valve or check adjacent or upon the air-nozzle.

The air-nozzle 3 is provided with a longitudinal and tapered passage 4 extending therethrough, and a circumferential groove 5, which the nipple of the balloon will engage.

Secured in the circumferential groove 5, is a flexible member 6 which may be a thread or a wire member knotted or secured in the groove 5, and extending downward from the nozzle 3 to a desirable, though somewhat limited extent.

Upon the end of the flexible member 6, I place a rotatable device or propeller 7 shown in plan in Fig. 3.

The member 7 should be provided with a plurality of blades extending around a common axial center, and the blades are so constructed that no sharp angles are present in the blades. It will be noted that 8, 9, and 10 of the propeller are of peculiar shape, and are not ordinary propeller blades. I have found by experiment that blades having an enlarged portion with a reduced extension within the line of the periphery of the main portion of the blade will produce a propeller that will revolve rapidly from the pressure of the air escaping through the nozzle 3.

The operation of my device may probably be understood from the description and its construction. However, I will briefly refer to the operation so that the full value of my invention may be appreciated.

When the balloon is deflated, it will have the same general appearance of an ordinary balloon of its shape and size. The bag portion 1 will be loose and flexible.

By applying the nozzle 3 to the lips and by blowing therethrough, the bag 1 is inflated until it assumes the extending condition shown in Fig. 1, and then, with the finger, placed over the opening of the nozzle 3, the balloon is removed from the lips, and when the propeller 7 extending downward away from the balloon, the fingers are released, and the balloon is allowed to drift away. The pressure of the air escaping from the nozzle 3 and impinging upon the propeller 7 will rapidly revolve the propeller urging the balloon upward, and while I have found that a balloon of this type and with a free air passage through the nozzle 3 will not elevate to any appreciable extent when released, the addition of the propeller will cause a similar balloon to soar upward to an extraordinary height. An advantage of the device as a toy resides not only in the entire construction and its ability to perform in a manner uncommon in ordinary ballons, but the revolving propeller will also prove attractive because of its novelty and its control over the action of the balloon.

I believe that modifications may be made within the scope of the appended claims, but I prefer the whole as shown and described.

Having carefully and fully described my invention, what I claim and desire to secure by Letters Patent is:

1. A toy balloon having a nozzle provided with an unobstructed and tapered air passage

therethrough, and a propeller in axial alinement with said air passage but spaced therefrom and a flexible member securing said propeller to said nozzle.

2. An air balloon having an air passage, a nozzle provided with a tapered discharge passage and arranged in said air passage, a flexible member secured to said nozzle, and a propeller having a plurality of approximately flat blades and rotatably secured to said flexible member, said propeller being arranged with its axis approximately in line with the axis of said nozzle, and within the line of air discharge from said nozzle; all combined for joint operation, as herein set forth.

Signed at New York city, in the county and State of New York this 28 day of December, 1917.

HYOKICHI MARUI.