

Aug. 2, 1932.

S. ROSENBERG

1,869,867

FLYING MACHINE

Filed Sept. 30, 1931

2 Sheets-Sheet 1

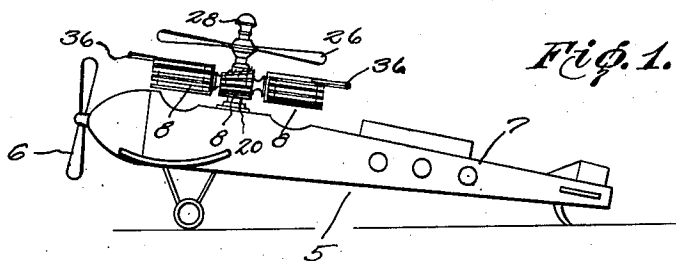


Fig. 1.

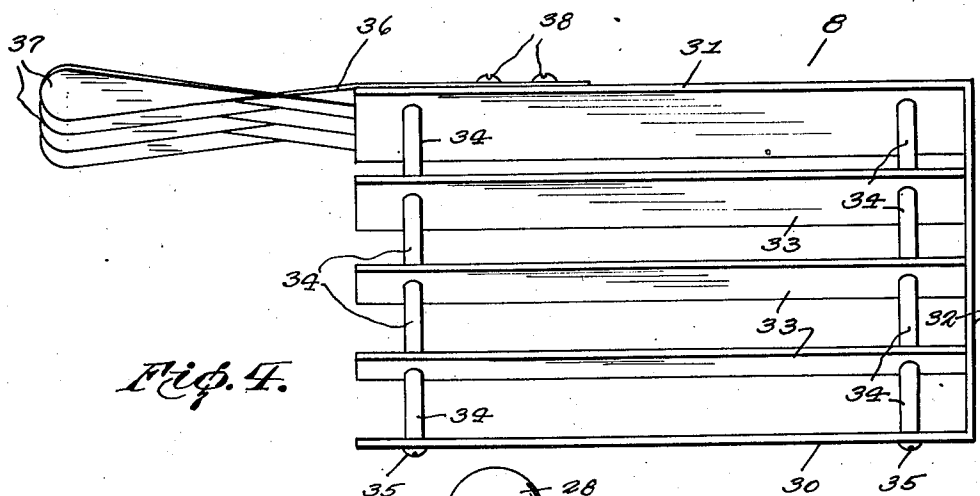


Fig. 4.

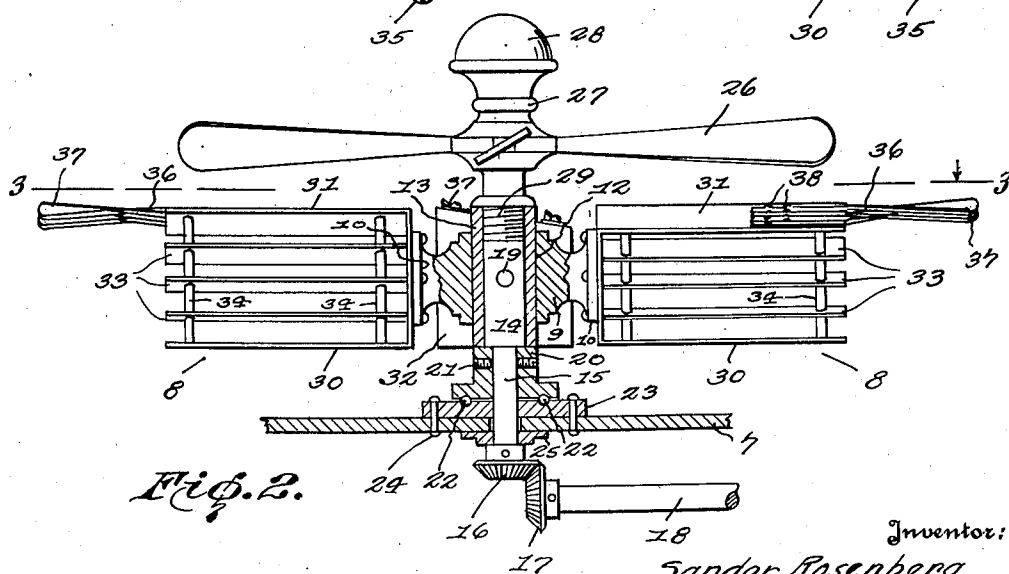


Fig. 2.

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Fig. 3.

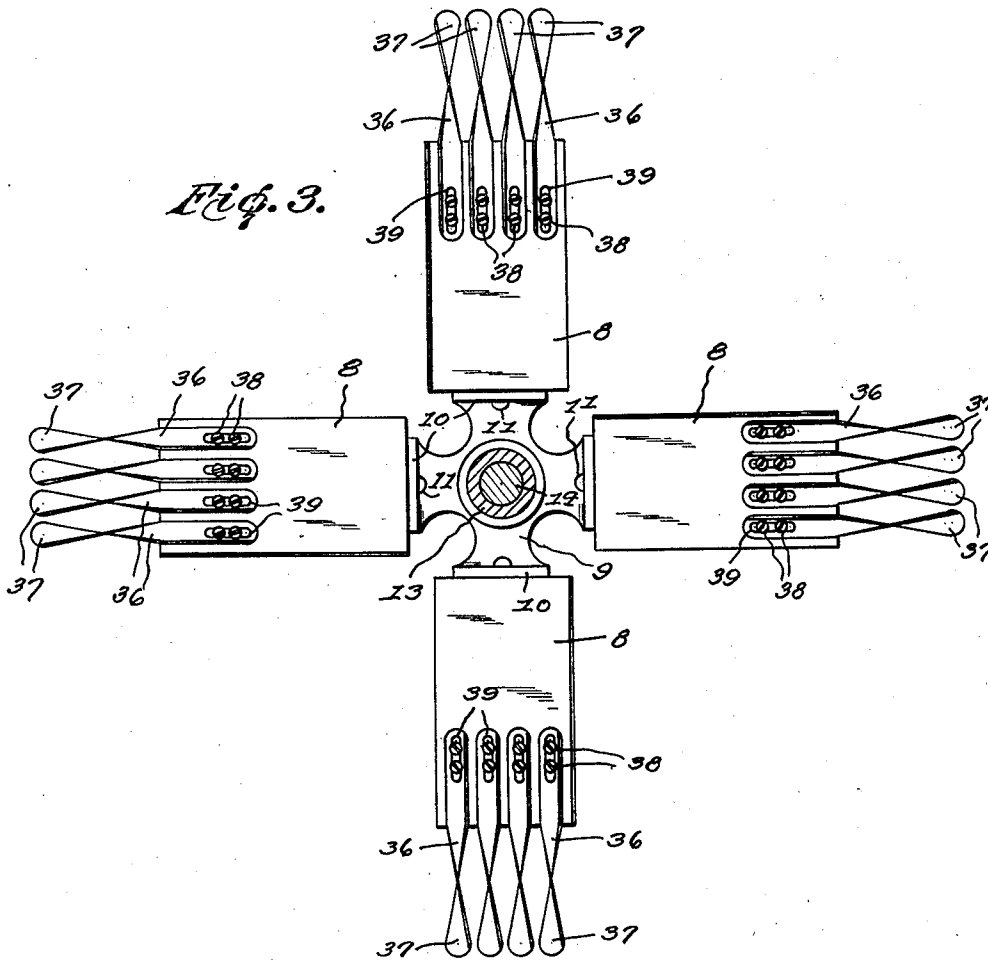
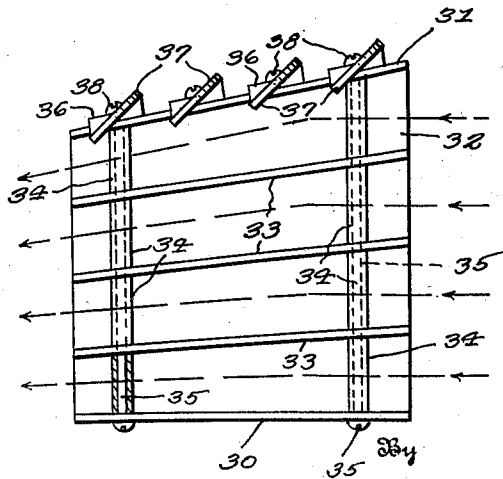


Fig. 5.

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UNITED STATES PATENT OFFICE

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FLYING MACHINE

Application filed September 30, 1931. Serial No. 566,141.

The subject-matter of the present invention relates generally to flying machines, but specifically has to do with condensers, said invention being an improvement over the application Serial Number 431,247, filed by Sandor Rosenberg and Jacob Hochman on February 25, 1930, and allowed April 27, 1931, as Pat. No. 1,828,819.

A primary object of the invention resides in the provision of a condenser adapted to be rotatably attached to a flying machine, said condenser being provided with inclined partitions to divide said condenser into a plurality of condensing or compressing compartments.

Another object is to provide means for arranging said partitions in spaced relation between the top and bottom of the condenser whereby the area of a compartment at the leading edge of the condenser is greater than the area at the trailing edge of said condenser.

Still another object of the invention is to provide each condenser with propeller-like elements to facilitate the rise of the machine and to retard the descent thereof.

A further object resides in the provision of means for adjusting the lateral spread of said propeller-like elements with respect to a condenser.

Still a further object is to provide means for carrying a plurality of condensers on the fuselage of a flying machine, said means including mechanism for rotating said condensers.

With these objects in view, together with others which will appear as the description proceeds, the invention resides in the novel formation, combination, and arrangement of parts, all as will be described more fully hereinafter illustrated in the drawings and particularly pointed out in the claims.

In said drawings:

Figure 1 is an elevation of a flying machine equipped with my invention.

Fig. 2 is a central vertical sectional view of the means adapted to support a plurality of condensers.

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a front elevation of one of the condensers.

Fig. 5 is an elevation of one of the condensers as viewed at the outer end thereof.

Referring now more in detail to the accompanying drawings, wherein like characters of reference denotes similar parts throughout the several views, let 5 indicate generally a flying machine having the usual propeller 6 and fuselage 7, the latter being adapted to support certain driven means for rotating a series of condensers, as will presently appear.

Upon inspection of Fig. 2 it will be noted that the means for supporting the condensers 8 comprises a block 9, said block including radially directed flanges 10 (see Fig. 3), each flange being riveted or otherwise secured to the inner ends of the condensers, as indicated at 11. As shown in said Fig. 2, the block 9 is provided with a bore 12 for the reception of a sleeve 13, the latter receiving shaft 14 which is reduced in diameter, as shown at 15, for extension through the fuselage 7 of the flying machine. The end of the shaft 15 is provided with a bevel gear 16 meshing with a similar gear 17 affixed to shaft 18. As said shaft 14, the sleeve 13 and the block 9 are bound together by pin 19, it is obvious that the motion of shaft 18 is imparted to the condensers by the parts just described.

In order to reduce friction to a minimum I propose to provide a coupling 20 which is secured to shaft 15 by means of headless set screws 21, (see Fig. 2), said coupling resting on ball bearings 22 associated with a base member 23, the latter being affixed to the fuselage 7 by means of rivets 24, or the like, and if desired at thrust collar 25 may be interposed between the inner surface of the fuselage 7 and the gear 16. As shown in Fig. 2 the sleeve 13 also supports a suitable propeller arrangement 26, which includes a casting 27 having a knob 28 at one end and a threaded stud 29 at its other end, the latter being provided with left-hand threads and adapted to threadedly engage the upper portion of said sleeve 13, as shown. In view of this arrangement it is obvious that the propeller 26 rotates with the shaft 14.

The foregoing comprises the means for

supporting and rotating the plurality of condensers and it will be understood the shaft 18 may be coupled with any convenient source of power for imparting rotative motion to the condensers about to be described in detail.

As pointed out hereinbefore it is the object of the invention to provide a series of rotatable condensers whereby a flying machine will rise, with its burden, vertically in its ascent and descent to the earth substantially vertically and landing thereon without undue shock or damage to the machine. The present condenser is designed to create a greater lifting power and control than the condenser or compressor described and claimed in the application referred to hereinbefore and in addition, more power is created for lifting and lowering the plane, said improvements being accentuated by propeller-like elements associated with each condenser.

The condensers 8 are each somewhat box-like in formation and includes a bottom 30, substantially horizontally disposed, a top 31 inclined from the leading to the trailing edges of the condenser, and an end portion 32, the latter being affixed to one of the flanges 10, referred to hereinbefore. Upon inspection of Fig. 5 it will be noted that the condenser is provided with a plurality of partitions 33 which are spaced from the top and bottom of the condenser, and from each other by means of a plurality of sleeves 34, an elongated screw 35 being passed through the sleeves, (see Fig. 5), to effect the assemblage shown. All of the partitions incline toward the rear of the condenser, but are disposed at various angles in order to define compartments or air passages having their exposed front portions possessed of an area greater than the area of the rear portions or discharge sections. This arrangement will be readily understood on inspection of said Fig. 5 and obviously as the air passes through each compartment, (see broken line indication), said air is condensed and its impingement on the adjacent partition creates a great lifting power when the set of condensers are rapidly rotated. In order to increase the lifting power of the condensers, each condenser is provided with a plurality of propeller-like elements 36, said element extending from the outer end of the condensers and having its outer end flexed or twisted at an acute angle to the top of the condenser, as indicated at 37, Fig. 5. These propeller-like elements cause a greater uplifting of the plane and may be adjusted inwardly and outwardly to increase or decrease said lifting power as desired. As indicated in Fig. 3, said adjustment is effected by manipulating the set-screws 38 mounted in slots 39 of said elements 36. Said slot permits the inward or outward sliding of the elements 36 to vary their extension from the top of the condenser, thus af-

fording simple means for varying their position with respect to said condenser.

While only four condensers are shown in the drawings it will be understood that this number is subject to variation in accordance to the demands of the service. It will also be appreciated that the rapid rotation of the condensers causes the air currents to pass therethrough at a terrific high velocity and in view of the converging compartments within the condensers, defined by the top, the bottom and the partitions thereof, said air currents are literally condensed to create a great lifting power to the arrangement when the plane is rising and to create a retarding power when the plane is being lowered to the ground.

While the present is a disclosure of the preferred embodiment of the invention, it is to be understood that the invention is not limited thereto, as various changes in the minor details of construction, proportion and arrangement of parts may be resorted to without departing from the spirit of the invention as defined in the appended claims.

I claim:

1. A rotatable condenser adapted to be attached to a flying machine, said condenser comprising a top and bottom and a series of partitions positioned between said top and bottom, the arrangement of the partitions and top and bottom being such that air passing through said condenser is compressed upon the rotation of said condenser and a propeller-like element extending laterally of said condenser.

2. A device of the character described comprising a plurality of rotatable condensers adapted to be attached to a flying machine, each of said condensers comprising a top and bottom and a series of inclined partitions arranged between said top and bottom and a plurality of adjustable propeller-like elements extending laterally of each condenser.

3. A device of the character described comprising a rotatable support; means for compressing air currents and borne by said support, said means including a series of box-like condensers including a series of partitions dividing the condensers into compartments having a greater area at the forward edge of the condensers and a plurality of angularly disposed blades extending laterally of the condensers.

4. In a device of the character described, the combination with a rotatable support, of a series of box-like condensers borne by said support, each of said condensers being provided with partitions dividing the condenser into compartments presenting a greater area at the leading edge of the condenser and a plurality of propeller-like elements adjustably borne by the condensers and extending laterally thereof.

5. A rotatable condenser adapted to be attached to a flying machine, said condenser

comprising a bottom and a rearwardly inclined top and an inclined partition arranged between said top and bottom whereby the air passing between said top and bottom and the
5 partition is compressed upon the rotation of said condenser, and a blade adjustably borne by said top and extending laterally thereof, the outer portion of said blade being disposed at an acute angle to the plane of said top.

10 In testimony whereof I affix my signature.
SANDOR ROSENBERG.

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