

June 25, 1929.

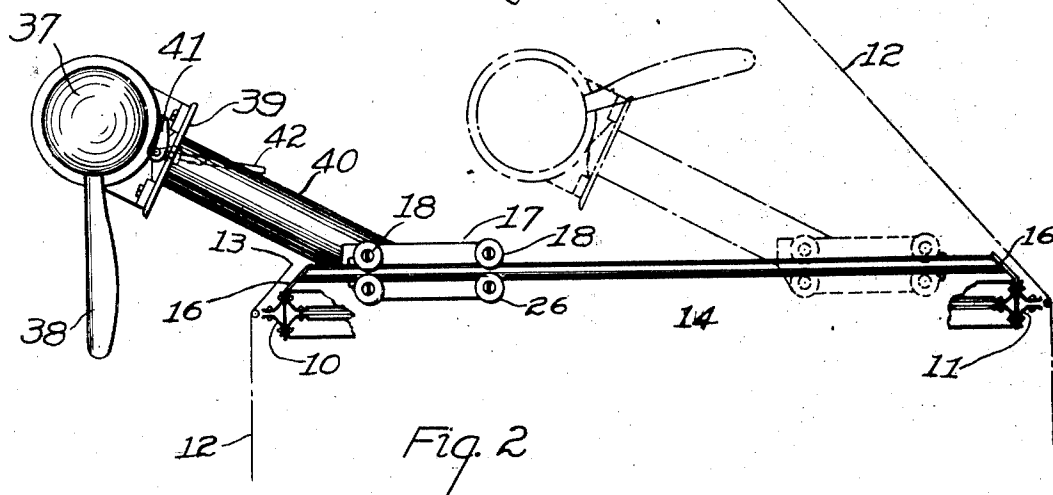
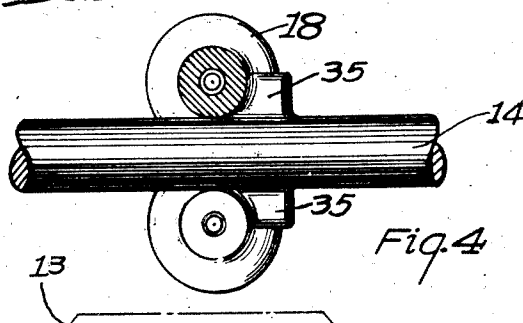
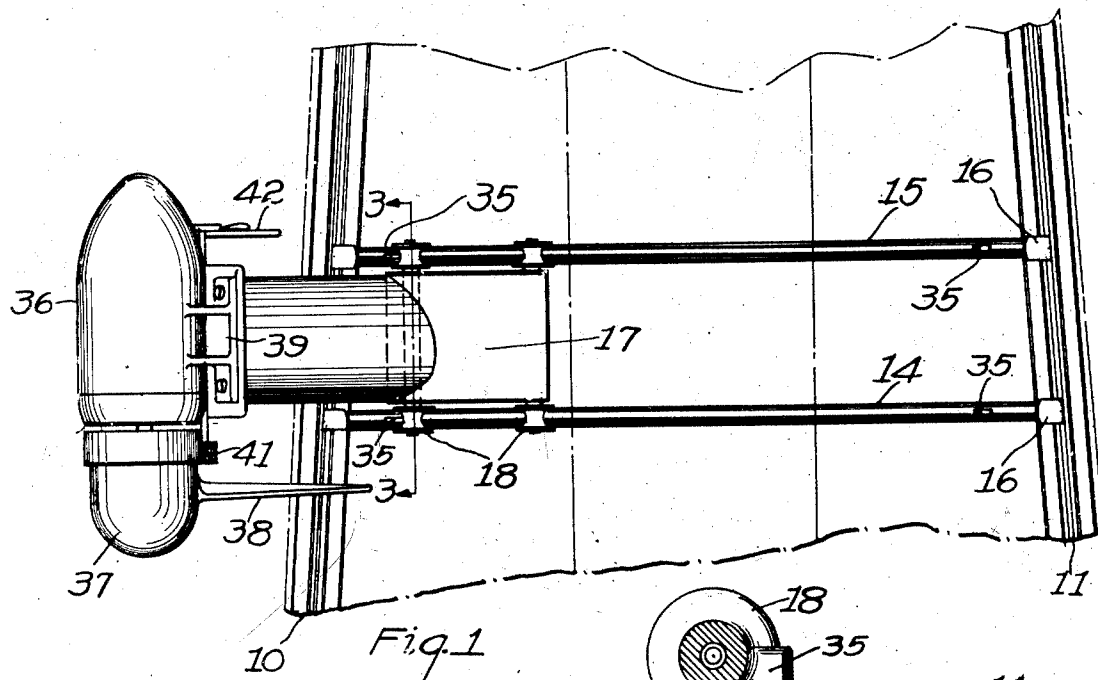
C. K. MORTON

1,718,795

RETRACTABLE GENERATOR MOUNT

Filed Nov. 5, 1927

2 Sheets-Sheet 1



INVENTOR
Charles K. Morton
BY
Kreis, Hudson & Kent
ATTORNEYS

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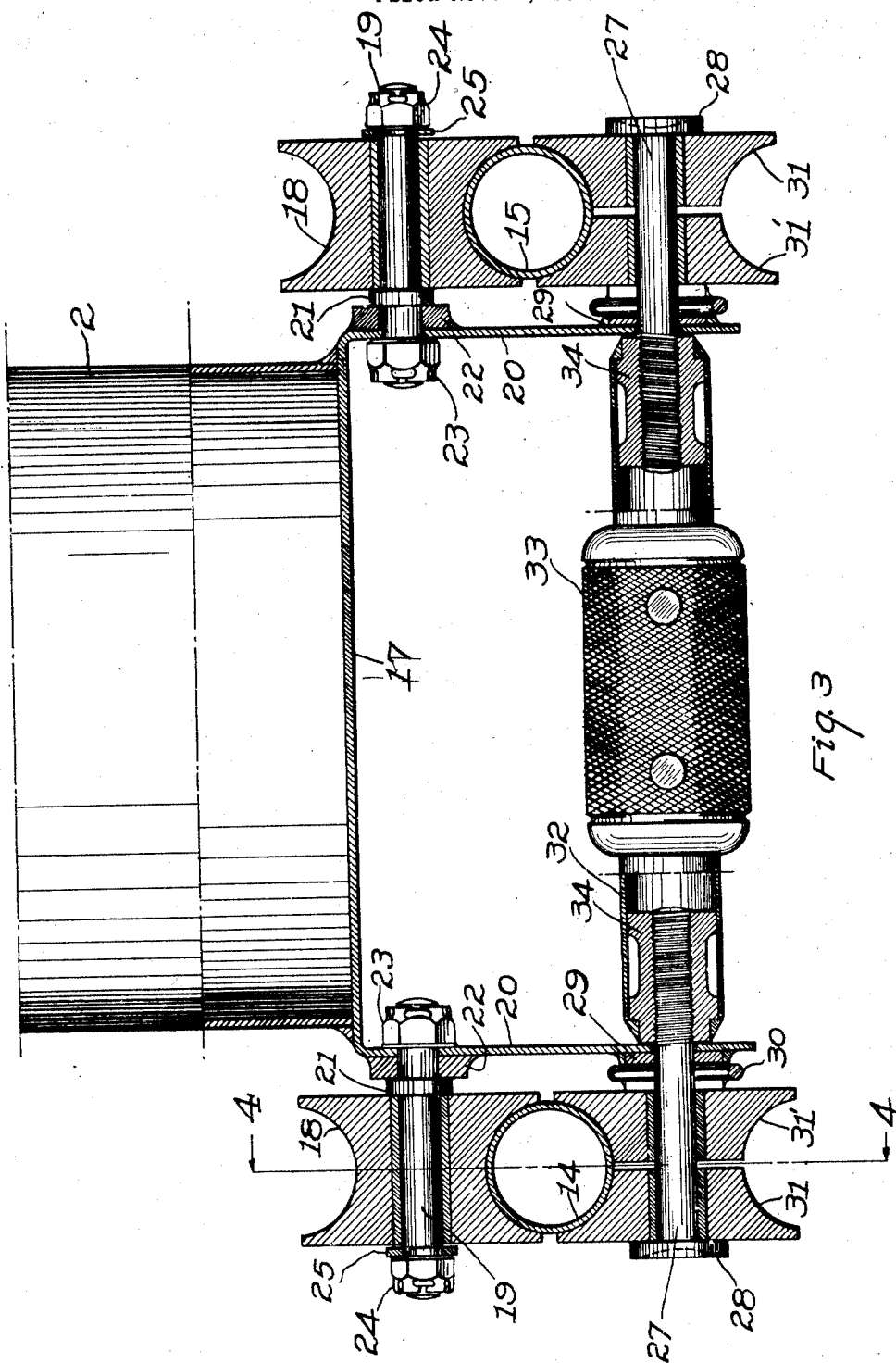
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RETRACTABLE GENERATOR MOUNT

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INVENTOR
Charles K. Morton
BY
Kewis, Hudson & Kent
ATTORNEYS

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UNITED STATES PATENT OFFICE.

CHARLES K. MORTON, OF CLEVELAND, OHIO, ASSIGNOR TO THE GLENN L. MARTIN COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

RETRACTABLE GENERATOR MOUNT.

Application filed November 5, 1927. Serial No. 231,264.

This invention relates to improvements in airplanes, and has reference particularly to the mounting of a propeller driven electric generator in such manner as to make it possible to readily move the generator and its propeller from operative position outside the fuselage of the plane to inoperative position entirely within the fuselage and vice versa, as well as to positively hold the same in either operative or inoperative position.

One of the objects of the invention is the provision of a mounting for a small machine, such for instance as a radio generator, driven by an air propeller, permitting the retraction of the generator and propeller to a position within the fuselage of an airplane.

Another object is the provision of apparatus of this nature which shall be very easy to manipulate.

A further object is the provision of a common handle and lock control element for such apparatus, whereby the movement of the apparatus and its locking in operative and inoperative position may be performed with one hand and without changing the hand hold.

Other objects and features of novelty will appear as I proceed with the description of that embodiment of the invention which, for the purposes of the present application, I have illustrated in the accompanying drawings, in which—

Fig. 1 is a plan view of a portion of a fuselage with the upper structure removed, showing the generator in operative position.

Fig. 2 is a front elevation of the apparatus, showing in section also the longérons upon which the track employed in the invention is mounted.

Fig. 3 is a transverse vertical sectional view taken substantially on line 3—3 of Fig. 1, the clamping means being shown unapplied; and

Fig. 4 is a detail sectional view on the line 4—4 of Fig. 3.

In the drawings, two of the longérons of the fuselage structure of an airplane are shown at 10 and 11. The surfaces of the upper portion of the fuselage are indicated by the dot and dash lines 12 in Fig. 2. The left side of the fuselage is provided with an opening 13, for which there may be a suitable closure, not shown. A pair of spaced parallel rails 14 and 15, constituting a track, are

mounted and supported at their ends only upon the longérons 10 and 11, preferably by means of brackets 16 that are bent up from flat plates, one portion of each plate extending diametrically through the longérons 10 or 11, as the case may be, being riveted to the elements thereof. The joints between the ends of rails 14 or 15 and the brackets 16 may be formed by welding or in any other desirable manner.

Upon the track just described there is mounted a carriage 17 which is movable freely from one end of the track to the other except when locked, but which is held to the track regardless of the angle which the plane may take with respect to the horizontal. To this end there are provided four grooved wheels 18 engaging the upper sides of the rails 14 and 15, these wheels being rotatable upon spindles 19 extending outwardly from the side walls 20 of the carriage near the top thereof. The spindles 19 are provided with collars 21 which abut against bosses 22 on the side walls, and with threaded inner ends which take nuts 23 by means of which the spindles are clamped in place. At the outer ends of the spindles 19 are nuts and washers 24 and 25, respectively, for retaining the wheels 18 thereon. Similar wheels 26 are mounted upon the walls 20 at the rear of the carriage, these wheels abutting upon the lower portions of the rails 14 and 15.

At the forward end of the carriage the side walls 20 near the lower edge thereof support a three-part axle which includes two spindles 27 that have heads 28 on their remote extremities and are threaded on their inner extremities between the walls 20. These spindles are mounted in openings in the walls 20 and in the bosses 29 upon the walls. These bosses are slotted to receive pins 30 that extend diametrically through openings in the spindles, and by this means rotation of the spindles is prevented. Each spindle 27 carries the two sections 31, 31' of a wheel that is divided along a plane extending through the center of the corresponding rail 14 or 15. These divided wheels run on the lower sides of the rails directly opposite the forward pair of wheels 18, although obviously they might be otherwise positioned beneath the rails without departing from the invention in its broader aspect.

The third part of the axle comprises a tubu-

lar element 32, a hand hold or grip 33 mounted upon and secured to the tubular element, and a pair of nuts 34 which fit within the tubular element 32 and are welded or otherwise fastened therein. The nuts 34 are threaded to fit the threads on the inner ends of spindles 27. This portion of the axle extends entirely across the space between the walls 20, 20.

Both of the rails 14 and 15 are provided with stops 35 on their upper and lower sides near the opposite ends of the rails for limiting the movement of the carriage.

The carriage may support any small machine equipped with a propeller as the driving means. In the present instance I have illustrated an electric generator 36 on the shaft of which is mounted a rotating head 37 carrying a propeller blade 38. The base 39 of the generator is secured by any suitable means to an inclined strut 40 that is rigidly mounted upon the carriage 17. A brake 41 with an operating handle 42 may be provided if desired.

Assuming that the carriage and the associate parts are in the inoperative position illustrated in Fig. 2 by dot and dash lines, the operator grasps the handle 33 and rotates it in a direction to move the spindles 27 outwardly, thereby unlocking the carriage. Then, keeping hold of the same handle he runs the carriage out to the position shown in full lines in the same figure. Thereupon the handle 33 is turned in the opposite direction, pulling spindles 27 toward each other. By this means the outer sections 31 of the divided wheels are drawn inwardly. The inner sections 31' abut against the bosses 29, and these bosses with the walls 20 supporting them are held against inward movement by the central portion of the axle. Hence, the inner sections 31' of the divided wheels always form abutments directly opposite the outer sections 31 to which pressure is applied. Consequently, there is no tendency for the rails 14 and 15 to be bent out of line when the locking pressure is applied. In effect, the rail is gripped between the two sections of the wheel, the upper wheel 18 acting at the same time to prevent the rail from being deflected upwardly by the gripping pressure. However, if the rails 14 are made sufficiently stiff, the inner sections 31' are free in the clamping position, the pressure then being exerted between the sections 31 and the inner flanges of the upper wheels 18.

In withdrawing the carriage 17 and the elements supported thereby from operative to inoperative position the reverse procedure is, of course, followed.

Having thus described my invention, what I claim is:

1. In a device of the class described, a track, a carriage mounted to run upon said track, said carriage comprising a divided wheel embracing a portion of the track, and means for adjusting the sections of said wheel relatively to each other along a common axis, whereby the wheel may be made to grasp the track and prevent movement of the carriage.

2. In a device of the class described, a track comprising a rail supported at its ends, a carriage mounted to run upon said track, said carriage having a pair of wheels arranged to run opposite each other on opposite sides of said rail, one of said wheels being split and means associated with said split wheel for causing said wheels to grip said rail.

3. In a device of the class described, a track, a carriage therefor having an axle formed in three parts, the central part constituting a handle by which the carriage may be moved, wheels mounted on the outer parts of the axle and running upon said track, and means actuated by the rotation of the central part of the axle for clamping the carriage upon the track.

4. In a device of the class described, a track comprising a pair of spaced rails, a carriage running on said track, said carriage having a pair of wheels, one running upon each of said rails, a common axle for said wheels, and means for shortening said axle, whereby the carriage is clamped to the rails.

5. In a device of the class described, a track comprising a pair of spaced rails, a carriage, a pair of wheels therefor running upon said rails, one of said wheels being divided along a plane parallel to the rail upon which it runs, shoulders upon the remote sides of the divisions of said wheel, and means for shortening the distance between said shoulders, whereby the divided wheel is caused to grip the rail.

6. In a device of the class described, a track comprising a pair of spaced rails, a carriage, a pair of wheels therefor running upon said rails, said wheels being divided along planes parallel to the rails upon which they run, a common axle for said wheels formed of two headed end portions and a central portion reversely threaded upon said end portions, said central portion co-operating with the headed ends to reduce the distance between the sections of both wheels.

In testimony whereof, I hereunto affix my signature.

CHARLES K. MORTON.