L. F. RAGOT.

BALANCING TANK.

APPLICATION FILED AUG. 13, 1910.

1,003,796.

Patented Sept. 19, 1911.

2 SHEETS—SHEET 1.

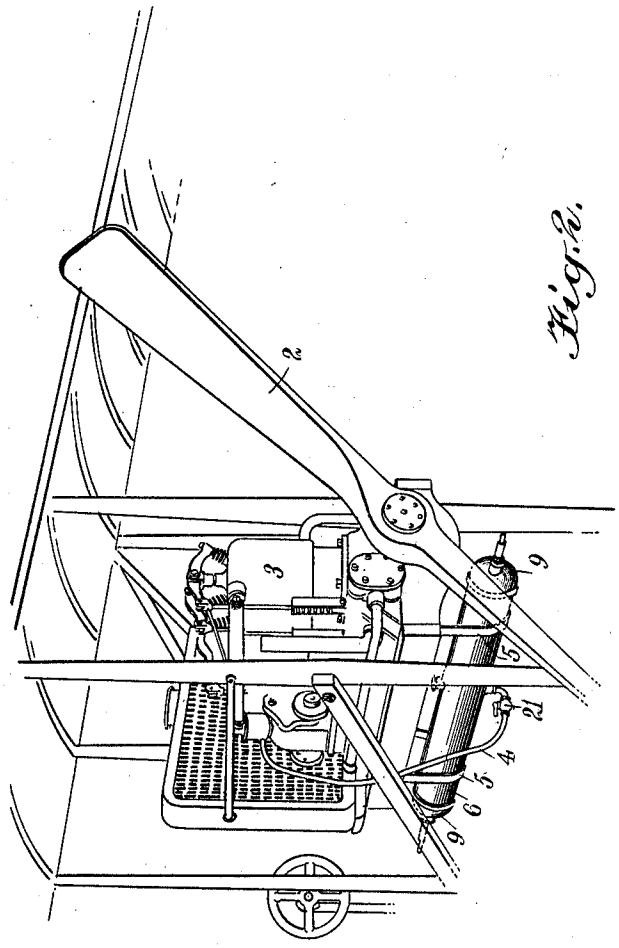

Fig. 1.

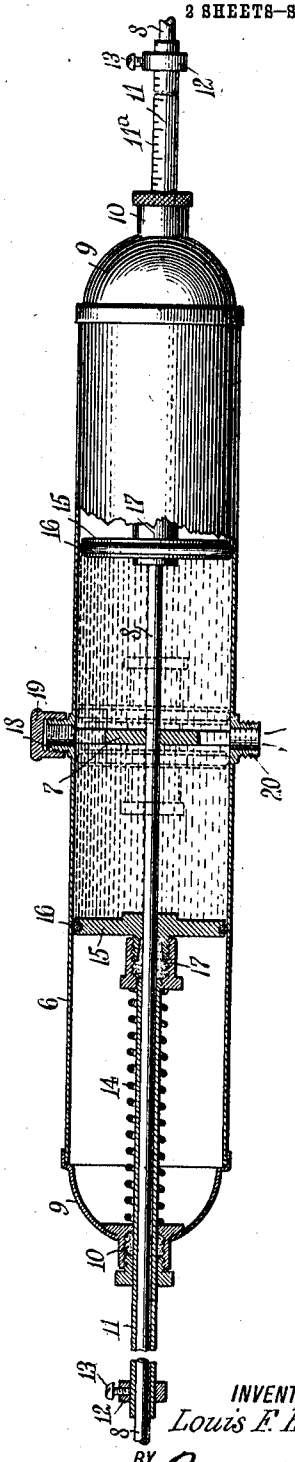

Fig. 2.

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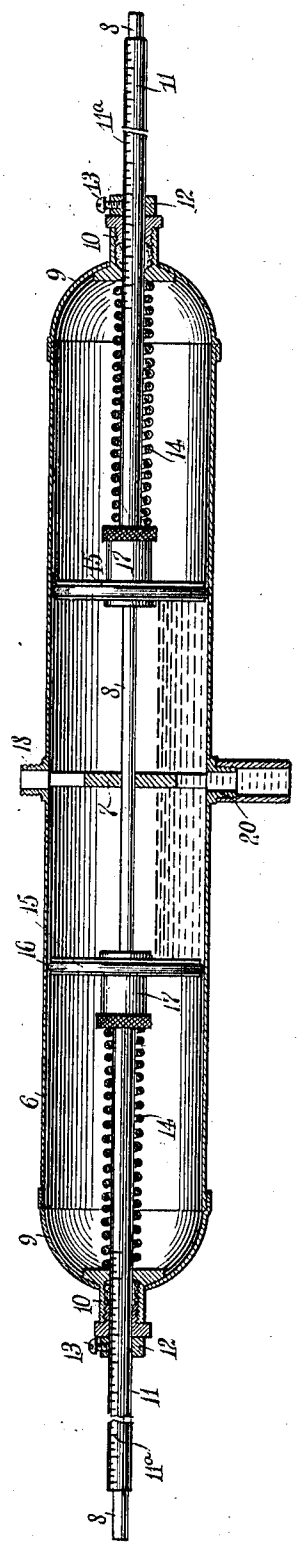

Fig. 3.

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LOUIS F. RAGOT, OF MILFORD, PENNSYLVANIA.

BALANCING TANK.

1,003,796. Specification of Letters Patent. Patented Sept. 19, 1911.

Application filed August 13, 1910. Serial No. 576,960.

To all whom it may concern:

Be it known that I, LOUIS F. RAGOT, a citizen of the United States, and a resident of Milford, in the county of Pike and State of Pennsylvania, have invented a new and Improved Balancing Tank, of which the following is a full, clear, and exact description.

My invention relates to balancing tanks of a kind suitable for holding free liquids, and so arranged that when the tank holds varying amounts of the liquid, the center of gravity of the tank remains practically unchanged.

More particularly stated, I seek to produce a tank suitable for use upon flying machines and the like, for carrying hydrocarbon fuel used for furnishing power for the machine, the parts being so constructed and arranged that as the liquid is gradually used up and consequently the tank becomes lighter, the center of gravity of the tank remains in its original position relatively to the framework of the machine.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary perspective showing my improved balancing tank mounted upon a flying machine; Fig. 2 is a view partly in section and partly in elevation, showing the tank with the parts in the positions they occupy while the tank is discharging the liquid; and Fig. 3 is a longitudinal section showing the tank with the parts in the positions they occupy while the tank is being filled with the liquid.

At 2 is a rotary propeller which is driven by a hydrocarbon engine 3. Connected with this engine for supplying liquid fuel thereto is a pipe 4.

At 5 are metallic straps carried by the flying machine for the purpose of supporting my improved balancing tank. This tank is shown more particularly in Figs. 2 and 3. Mounted rigidly within a cylindrical shell 6 is a center plate 7. A guide rod 8 extends directly through the center plate 7 and is rigid relatively to the latter and to the shell 6. The guide rod 8 is of greater length than the shell 6. Screw caps 9 are mounted upon the ends of the cylindrical shell and are provided with stuffing boxes 10. Encircling the guide rod 8 are two tubular guides 11 provided respectively with graduations 11^a, as shown at the right of Fig. 2. The tubular guides 11 are slidable in relation to the guide rod 8.

At 12 are two set collars, each provided with a screw 13. These two set collars 12 are adjustable relatively to the tubular guides and may within certain limits be set at any point thereon at the will of the operator. The graduations 11^a are useful for determining the points at which the collars may be set.

Mounted within the shell 6 and at opposite ends thereof are two spiral springs exactly alike, these springs being shown at 14. Each spiral spring 14 encircles the adjacent tubular guide 11 and presses against the stuffing box 10.

At 15 are two pistons provided with packings 16 and slidable in relation to the shell 6. Each piston 15 is connected by a stuffing box 17 with the adjacent tubular guide 11.

At 18 is a threaded nipple by aid whereof liquid hydrocarbon, or other fuel, is let into the tank. This nipple is normally closed by a cap 19 which is threaded internally and screwed upon it, as indicated in Fig. 2. The shell 6 is further provided with a nipple 20 which serves as a coupling for connecting the pipe 4 with the tank. This pipe 4 is provided with a hand valve 21 by aid whereof the liquid fuel may be allowed to leave the tank. The tank as a whole is connected rigidly with the straps 5 and may be placed in any desired position, but in the instance shown it is disposed below the engine 3 and is adapted to force the liquid fuel upward to said engine.

The operation of my device is as follows: The parts being assembled as indicated in Figs. 2 and 3, we will suppose first that the operator desires to fill the tank—or rather, that he desires to place within the tank a predetermined quantity of liquid fuel—say two gallons. He ascertains from the graduations 11^a at opposite ends of the tank, just where the collars 12 should be set in order to adjust the capacity of the tank to the amount of liquid fuel to be charged into the tank. He next grasps the tubular guides 11, pulls them outward in the general direction of their respective lengths, loosens the screws 13, slides the collars along the tubular guides until they lodge against the stuffing boxes 10, and finally, when the tubular guides are adjusted properly in relation to