Aug. 18, 1931. H. G. BAUGH 1,819,728

MULTIPLE BLADE PROPELLER

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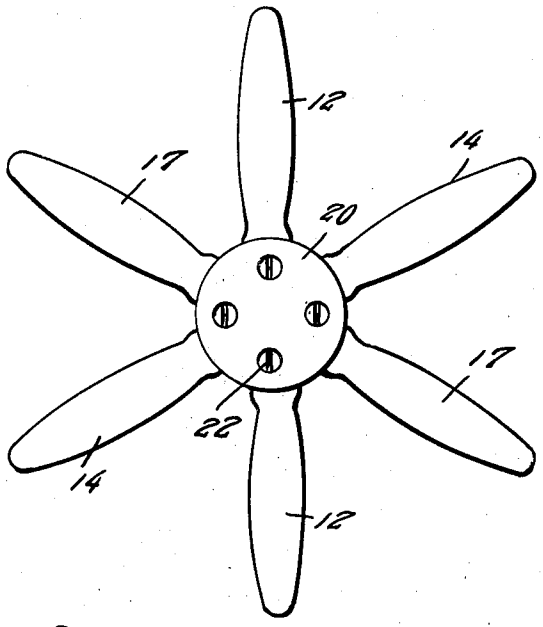


Fig. 1.

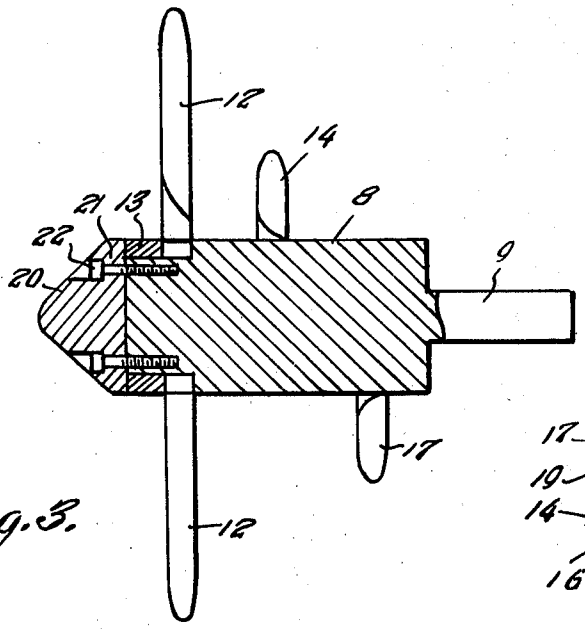


Fig. 3.

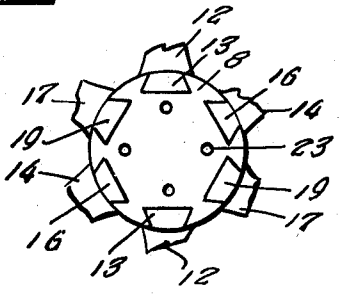


Fig. 4.

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Fig. 2.

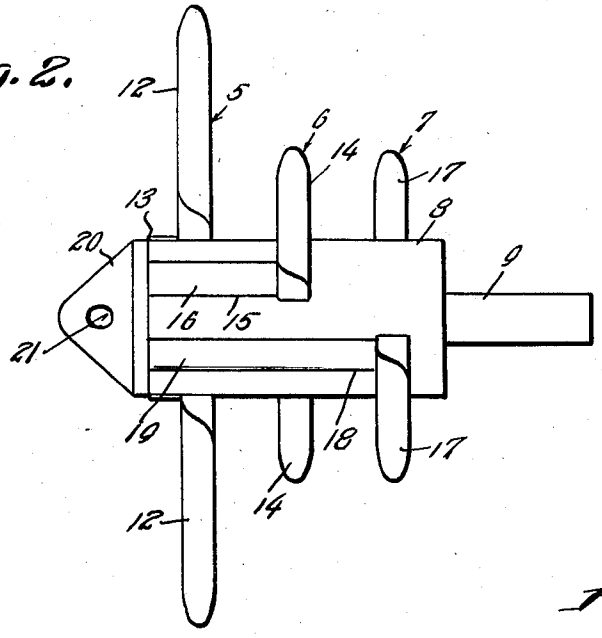


Fig. 6.

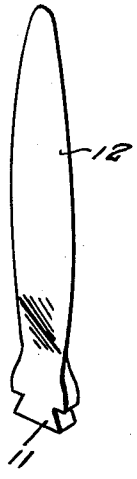
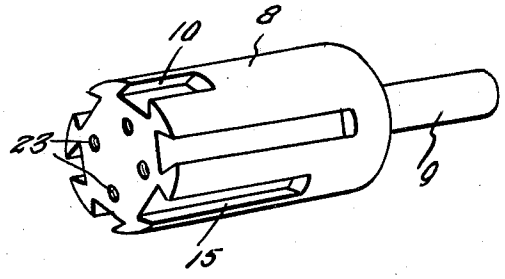


Fig. 5.



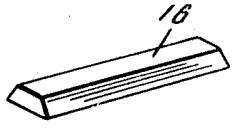


Fig. 7.

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UNITED STATES PATENT OFFICE

HOMER G. BAUGH, OF CHICAGO, ILLINOIS

MULTIPLE BLADE PROPELLER

Application filed September 12, 1930. Serial No. 481,487.

This invention appertains to new and useful improvements in propellers for aircraft and more particularly to a propeller of the multiple blade type.

The principal object of this invention is to provide a propeller unit wherein a multiplicity of blades are employed in rearwardly spaced stages and all in staggered relation with respect to each other.

Another important object of the invention is to provide a propeller unit wherein the blades may be readily removed for the purpose of repair or replacement.

These and other important objects of the invention will readily become apparent to the reader of the following specification.

In the drawings:—

Figure 1 represents a front elevational view of the novel propeller.

Fig. 2 represents a side elevational view of the novel propeller.

Fig. 3 represents a longitudinal sectional view through the novel propeller.

Fig. 4 represents a fragmentary front elevational view of the propeller with the cap removed.

Fig. 5 represents a perspective view of the propeller block with the blades removed.

Fig. 6 represents a perspective view of one of the blades.

Fig. 7 represents a perspective view of one of the retaining fillers.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the propeller is divided into three stages or groups of blades, the first group being generally referred to by the numeral 5, the second group being generally referred to by numeral 6, and the third group being generally referred to by numeral 7.

It is to be understood of course, that the stages may be two stages or more than three stages, without interfering with the scope of this invention.

In carrying out the present invention, a block 8 is employed, preferably of cylindrical shape and from which the drive shaft 9 projects at one end. Extending inwardly from the opposite end of the blocks 8 are the two dove-tail grooves 10 for receiving the dove-tail protuberances 11 on the corresponding blades 12, these blades 12 making up the first stage 5. Blade retaining fillers 13 with their edges beveled in the dove-tailed grooves 10 are engaged in these grooves so as to abut the inner end of the blades 12 in the manner clearly apparent in Figs. 2 and 3.

The blades 14 of the second stage 6 are also provided with the aforementioned dove-tail protuberances 11 which engage in the dove-tail groove 15, which terminate substantially midway between the ends of the block 8.

Filler elements 16 serve to retain the blades 14 in the position and are shaped in a manner substantially as shown in Fig. 6. The blades 17 of the third stage are also provided with dove-tail protuberances 11 engageable in the elongated dove-tail grooves in the block 8, these grooves 18 extending a substantial distance beyond the grooves 15 as in the manner substantially shown in Fig. 2.

Filler blocks of the construction shown in Fig. 7 in the groove 18 retain the blade 17 against displacement. A toggle-shaped cap 20 is provided with bores 21 for receiving screws 22, which screws are engageable into the threaded openings 23 in the outer end of the block 8.

When these screws are tightened, for snugly engaging the cap 20 against the outer end of the block 8, the cap will firmly abut the outer ends of the fillers 13, 16 and 19 so as to firmly retain the blades 12, 14 and 17 against displacement.

Obviously, the blades can be removed from the block 8 in a convenient manner so as to permit repair and replacement thereof, without difficulty.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having thus described my invention, what I claim as new is:—

1. A propeller comprising a hub having a number of longitudinally extending grooves therein, said grooves passing through one end of the hub and terminating short of the other

end, the grooves being arranged in sets with the grooves of the different sets varying in length, propeller blades having their inner ends fitting in the grooves and engaging the closed ends of the grooves and means for retaining the blades in position and filling the parts of the grooves not occupied by the ends of the blades.

2. A propeller comprising a hub having longitudinally extending grooves therein, said grooves passing through the front end of the hub and terminating a distance from the rear end thereof, each groove being of dove-tailed shape, propeller blades having their inner ends of dove-tailed shape and engaging the rear ends of the grooves, the grooves being arranged in sets with the sets varying in length, filler blocks of dove-tailed shape fitting in the grooves and having the rear ends abutting the ends of the blades, and a cap fastened at the front end of the hub and holding the filler blocks in position.

In testimony whereof I affix my signature.

HOMER G. BAUGH.