

Nov. 6, 1934.

F. HAIDLE ET AL

1,979,616

PROPELLER CONTROL

Filed April 28, 1934

2 Sheets-Sheet 1

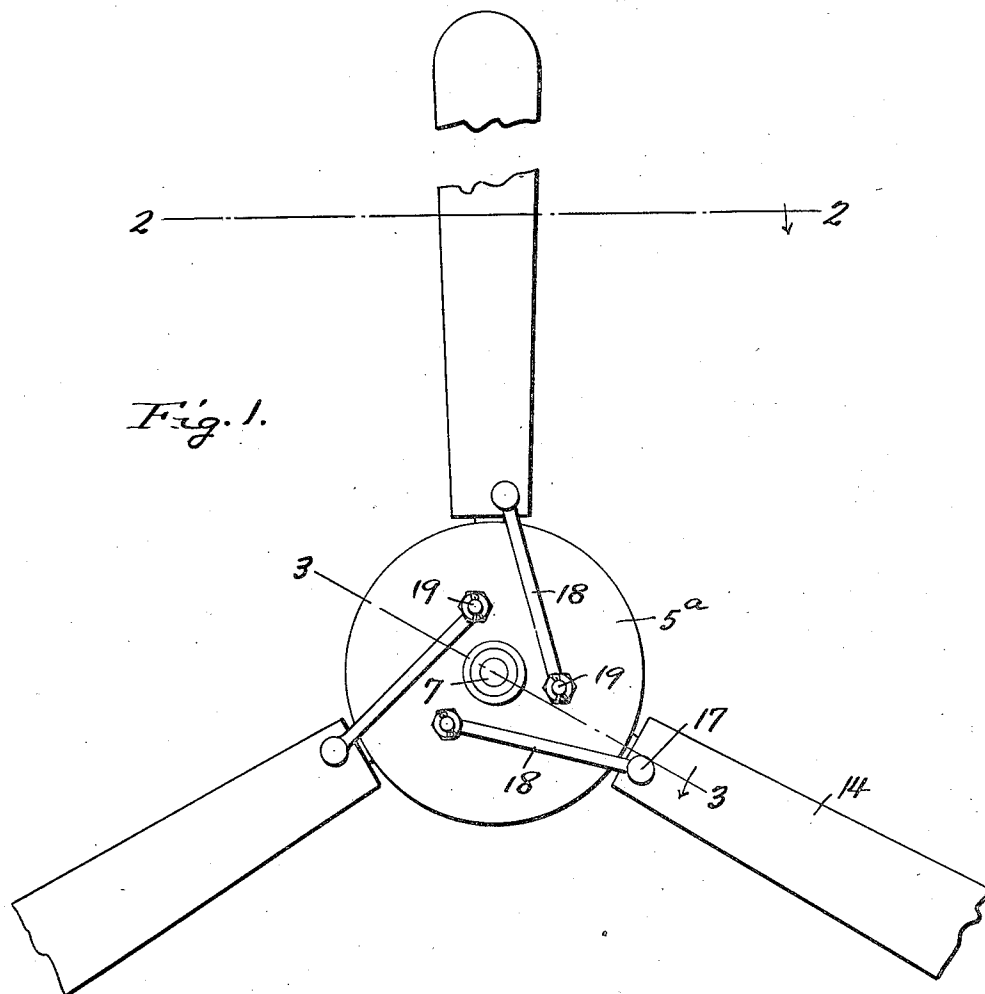


Fig. 1.

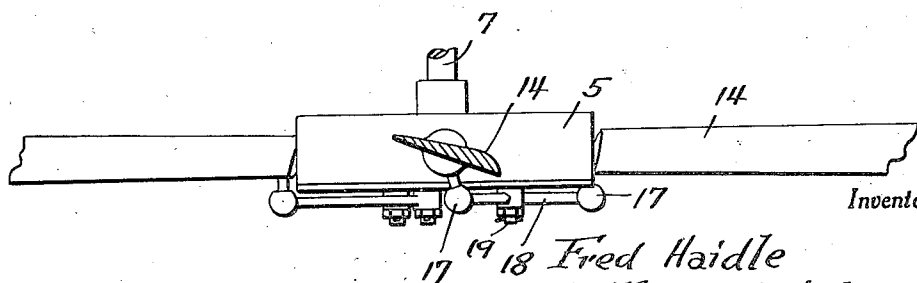


Fig. 2.

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Fig. 3.

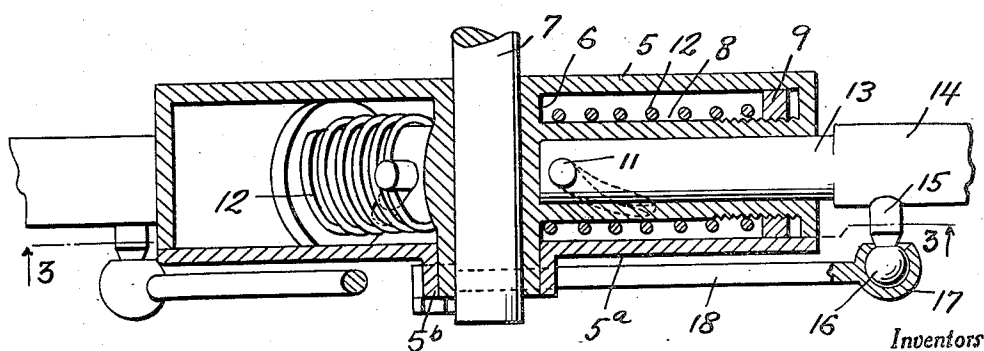
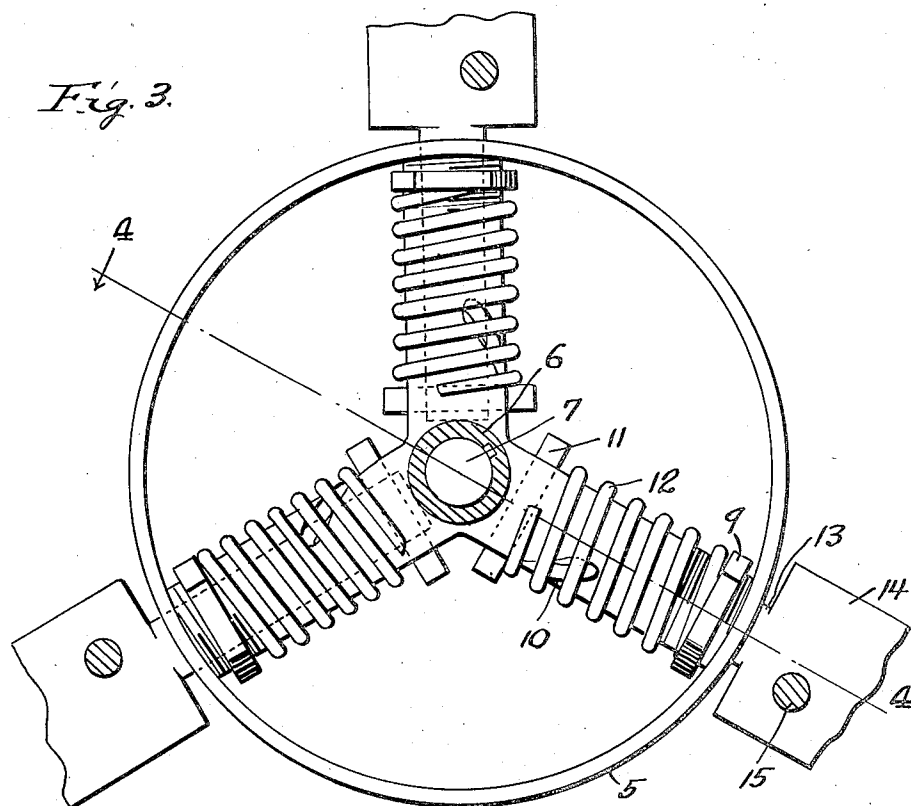


Fig. 4.

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UNITED STATES PATENT OFFICE

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PROPELLER CONTROL

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Application April 28, 1934, Serial No. 722,983

1 Claim. (Cl. 170—162)

This invention appertains to new and useful improvements in propellers particularly adapted for wind electric plants, the principal object being to provide a propeller which automatically serves to keep the generator driven at a steady rate of speed in any wind velocity.

Another important object of the present invention is to provide a propeller for wind driven electric plants, wherein the propeller will automatically adjust itself under varying wind conditions so as to act in itself automatically as a governor for the generator which it drives.

Other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

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

Figure 2 represents a sectional view taken substantially on line 2—2 of Figure 1, fragmentarily showing the propeller blades.

Figure 3 represents an enlarged fragmentary vertical sectional view through the hub portion of the propeller.

Figure 4 represents a sectional view taken substantially on line 4—4 of Figure 3.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the propeller consists of the well casing 5 having the barrel 6 extending therethrough for the drive shaft 7.

Radiating from the barrel 6 are the tubes 8 which meet the peripheral wall of the casing 5 and are threaded adjacent the outer ends to accommodate nuts 9 which can be adjusted thereon by removing the front plate 5^a of the casing 5. The plate 5^a has a hub 5^b and is rotatable on the barrel 6.

Each of the tubes 8 is provided with a spirally disposed slot 10 through which extends a pintle 11. However, as shown in Figure 3, there may be two of these slots for each of the tubes to accommodate two pintles 11. A coiled compressible spring 12 is located on each of the tubes 8 and is interposed between the corresponding pintles 11 and the corresponding adjusting nuts 9. These pintles 11 project laterally from the shank 13 of each of the propellers 14.

Each of the propellers 14 has a stub 15 projecting laterally and forwardly thereof and provided with a ball 16 at its end for disposition into the socket end 17 of an arm 18. Each of these arms 18 is pivotally connected to the removable front wall 5^a of the casing 5, as at 19 (see Figure 1).

It can now be seen that under ordinary working

conditions, the springs 12 will maintain the shanks 13 in retracted position with the pintles 11 at the innermost ends of the slots 10. When the propeller simply begins to rotate at an excessive speed, centrifugal force pulls outwardly on the propeller and consequently on the shanks 13 and as the shanks move outwardly, the pins 11, in riding in the slots 10, cause the partial rotation of the propellers so as to bring the propellers into a non-resisting position with respect to the wind. This continual centrifugal action causes an average speed safe for the generator being driven.

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 described the invention, what is claimed as new is:—

A propeller comprising a casing open at its front side, a barrel extending through the casing a closure plate at the front of the casing rotatably mounted on the barrel, a drive shaft extending into the barrel and being keyed thereto, tubes radiating from the barrel in the casing and being provided at their outer ends with adjusting nuts, said tubes being provided with spiral grooves, propeller blades having shanks disposed into the casing and into the said tubes, each of the said shanks being provided with a pintle disposed into the corresponding tube groove, a coiled compressible spring on each of the tubes interposed between the corresponding adjusting nut and the corresponding propeller shank pin, and pivotal tie rods between the propeller and the rotatable closure plate whereby the blades will adjust themselves in unison.

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