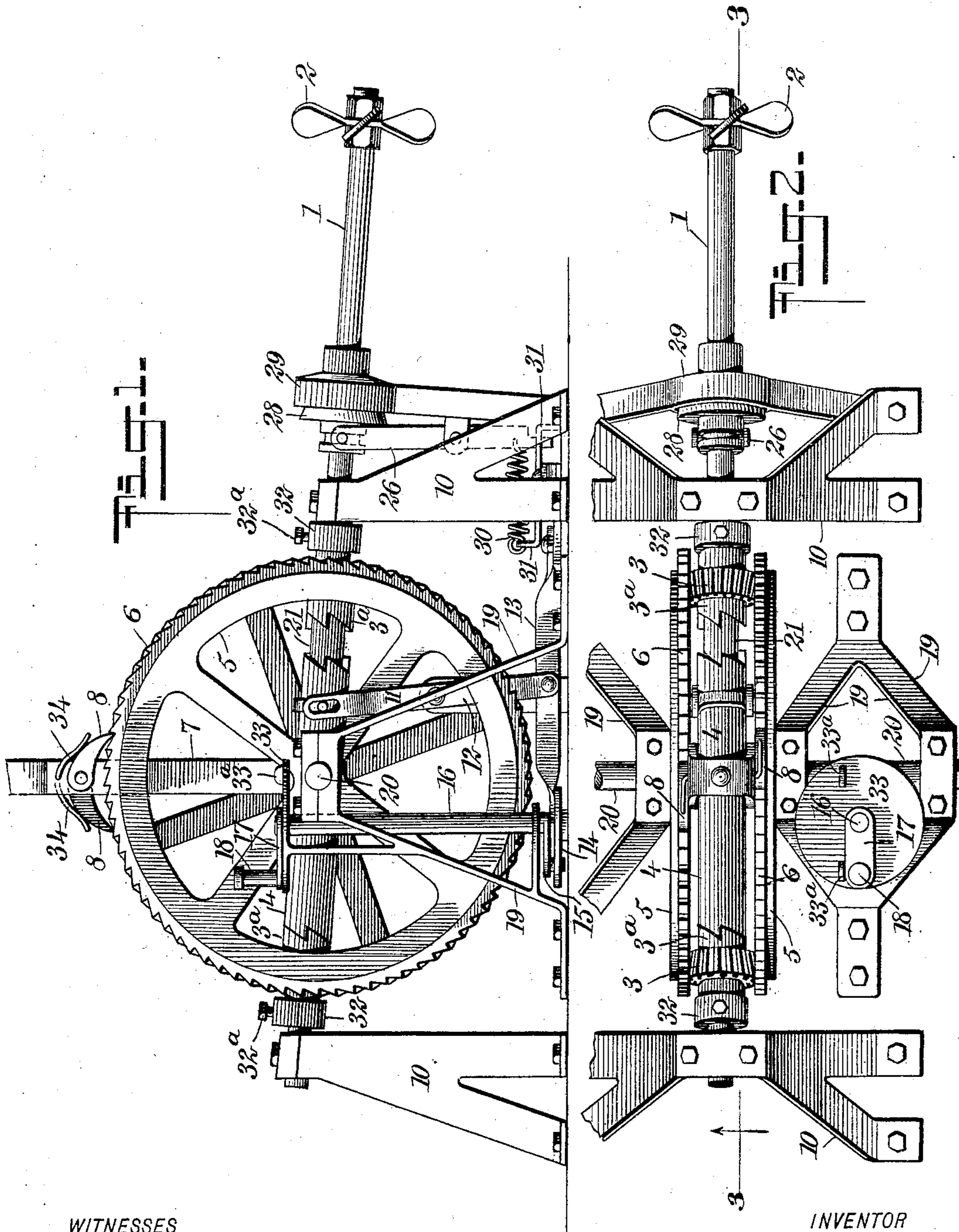


No. 840,944.

PATENTED JAN. 8, 1907.

N. JOHNSON.
HAND POWER PROPELLER.
APPLICATION FILED JULY 7, 1906.

2 SHEETS—SHEET 1.



WITNESSES

H. S. Dietrich
J. P. Davis

INVENTOR

Nels Johnson

BY *Mum & Co*

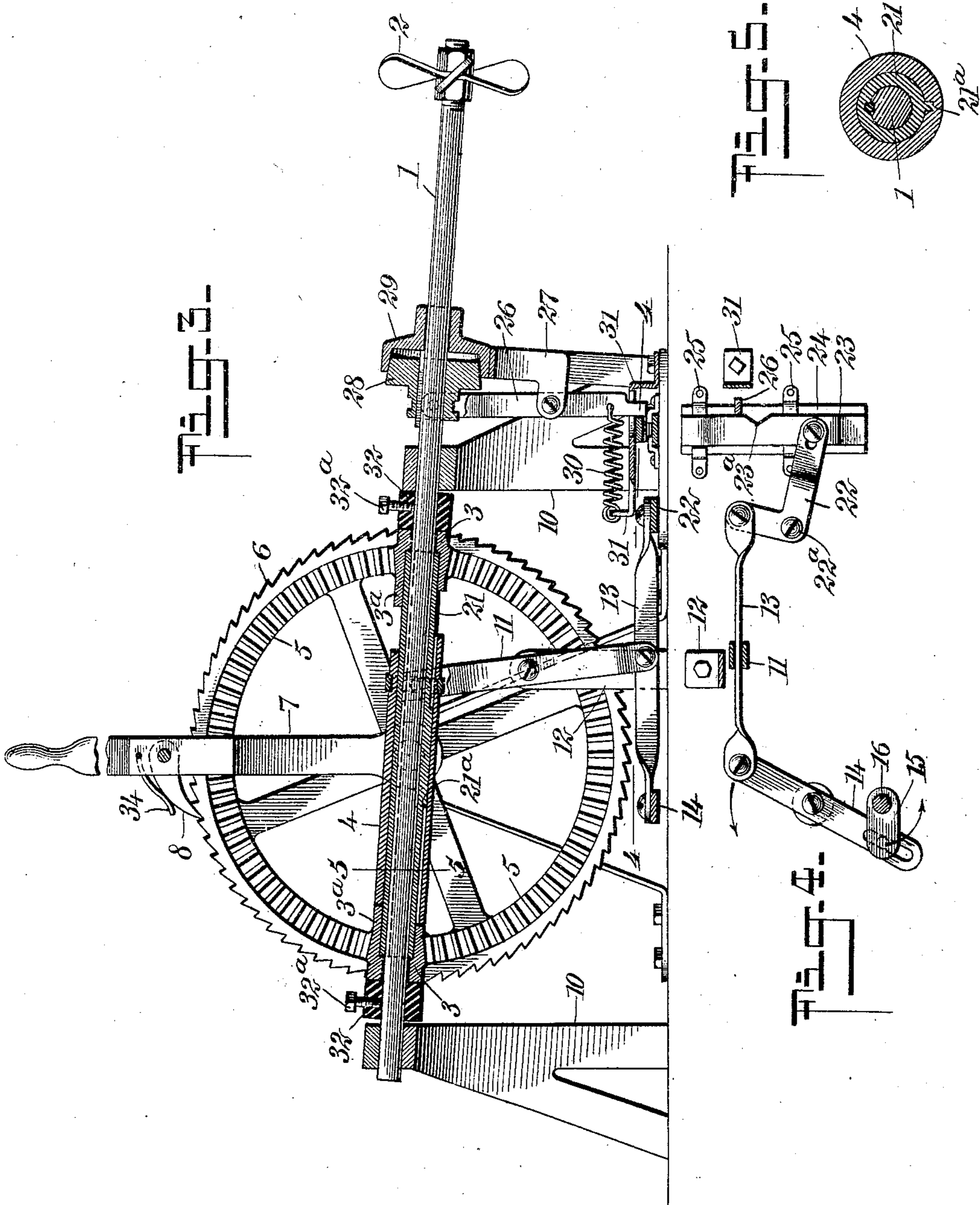
ATTORNEYS

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UNITED STATES PATENT OFFICE.

NELS JOHNSON, OF CHICAGO, ILLINOIS.

HAND-POWER PROPELLER.

No. 840,944.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed July 7, 1906. Serial No. 325,154.

To all whom it may concern:

Be it known that I, NELS JOHNSON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Hand-Power Propeller, of which the following is a full, clear, and exact description.

My invention relates to hand-power propellers, and has for its object to provide means for propelling small boats upon park-lakes and similar places without the use of oars, and thereby enable such boats to move about freely without interfering with each other. This I accomplish by the means illustrated in the accompanying drawings, in which drawings like characters of reference indicate like parts throughout the views, and in which—

Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a plan of the same. Fig. 3 is a vertical longitudinal section taken on the line 3 3 of Fig. 2. Fig. 4 is a horizontal section taken on the line 4 4 of Fig. 3, and Fig. 5 is a transverse section taken on the line 5 5 of Fig. 3.

As illustrated in the drawings, 1 represents a main shaft journaled upon standards 10 and provided on one end with a propeller 2. Pinions 3 are formed with sleeves 3^a freely mounted upon the shaft 1 and provided on one end with teeth adapted to engage corresponding teeth formed on the end of a sleeve 4, having a reciprocating movement upon a spacing-sleeve 21, secured to the shaft 1, and provided with a feather 21^a, adapted to engage the sleeve 4 and permit such longitudinal movement of the sleeve on the spacing-sleeve 21. The pinions 3 are held in place by means of collars 32, provided with set-screws 32^a. The sleeve 4 is freely connected with a vertical lever 11, pivoted to a standard 12, the lower end of said lever 11 having a pivotal connection with a horizontal bar 13, which is pivoted at one end to a lever 14 and at its opposite end to a bell-crank lever 22. The lever 14 is provided on one end with a slot which engages a pin secured to a crank 15, which is mounted on a vertical standard 16, having a crank 17 secured thereto and provided with a handle 18, the crank 17 being adapted to be turned on a table 33, provided with stops 33^a. The bell-crank lever 22 is secured in place by the pivot 22^a at the angle of said lever, the rearwardly-extending arm of said lever being provided with a slot which loosely engages a stud secured to a bar 23,

having a lateral notch 23^a and secured to a plate 24, which has a reciprocating movement in guides or ways 25, secured to a base-plate. An upright lever 26 is pivotally secured to a supported bracket 27 and connected at its lower end with a spiral spring 30, the other end of the spring being secured to a fixed bracket-arm 31. The upper end of the lever 26 is preferably formed into a yoke provided with pins which engage a groove formed in the hub of a clutch 28. This clutch is cupped, the circumferential flange thereon being flared, and thus adapted to engage a correspondingly coniform flange formed on a socket 29. The clutch 28 has a limited reciprocating movement on the shaft 1 by any suitable means. Laterally-toothed gears 5 are mounted upon shafts 20, that are journaled on upright standards 19. The peripheries of these gears are provided with ratchet-teeth 6, adapted to be engaged by pawls 8, said pawls being pivotally attached oppositely to a reciprocating lever 7, journaled on the inner end of the shafts 20. The pawls 8 may be held in engagement with the ratchet-teeth of the periphery of the gear by means of springs 34.

When the device is in operation, a reciprocating movement of the lever 7 engages the pawls 8 with the ratchet-teeth 6 of the gears 5 and causes the gears to rotate in opposite directions. The ratchet-teeth of one gear being oppositely disposed to those of the other gear, when the inner face of said gears are in engagement with one of the pinions 3, secured to the shaft 1, said shaft rotates in its bearings, thereby rotating the propeller 2. The reciprocating sleeve 4 is shorter in length than the distance between the pinions 3 and is thereby adapted to be brought in engagement with either one of said pinions or separated from both of them. When one end of the sleeve 4 is brought in engagement with one of the pinions 3 and the gears 6 rotate by means of the lever 7, the shaft 1 will rotate in one direction; but when said sleeve is disengaged from that pinion and brought into engagement with the opposite pinion the shaft and the propeller attached thereto will rotate in the opposite direction, and when the ends of the sleeve 4 are released from both of said pinions a rotary movement of the gears 6 will cause no rotation of the shaft 1, for the reason that the pinions 3 are journaled freely on such shaft. When it is desired to rotate the propeller-blades in any

desired direction, the reciprocating sleeve 4 is brought into engagement with the proper pinion 3 by means of the pivoted lever 11, connected to the bar 13, which is pivoted to the lever 14. This lever 14 is in turn operated by the crank 15, attached to the vertical shaft 16, having a crank 17 and handle 18 connected therewith. If it is desired to rotate the propeller-blade in an opposite direction, the handle 18 is moved over to a reverse position on the table 33, which, by means of the connecting parts already described, will bring the opposite end of the sleeve 4 in engagement with its adjacent pinion 3. At times, however, it is desired to stop the motion of the shaft 1 as quickly as possible. This is accomplished by releasing the reciprocating sleeve 4 from engagement with either of the pinions 3 by means of the lever 11 and its connected mechanism. The lower end of said lever being connected with the bar 13, which is pivoted to the bell-crank lever 22, a movement of the lower end of the lever 11 causes a transverse movement of the reciprocating bar 23. When the sleeve 4 is released from engagement with both of the pinions 3 the reciprocating bar 23 is arranged with the notch or recess 23^a in line with the lower end of the lever 26. When in such position, the spring 30 draws such lower end of the lever 26 into engagement with the notch 23^a and brings the head or clutch 28 into frictional engagement with the socket 29, thereby operating as a brake and stopping further rotation of the shaft 1. When the end of the sleeve 4 is in engagement with either of the pinions 3, the lower end of the lever 26 is pressed backward by means of the edge of the plate 23, which thereby draws forwardly the upper end of the lever 26 and the head 28 secured thereto and releases such head from engagement with the socket 29. Hence when the shaft 1 is being rotated by the lever 7 the head 28 is always free from engagement with the socket 29, and when the sleeve is out of engagement with the pinions 3, so that the shaft cannot be rotated by means of the lever 7, the head 28 is brought into contact with the socket 29 by means of the spring 30 and instantly stops any further rotation of the shaft 1.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

55 1. The combination with a rotating shaft,

of a propeller secured thereto, pinions journaled freely on said shaft, a sleeve having a longitudinal movement on the shaft, adapted to engage said pinions, laterally-toothed gears provided with ratchet-teeth on their peripheries, and a pivoted lever provided with a pawl adapted to engage the teeth of said gears, substantially as shown and described.

2. The combination with a rotating shaft, of a propeller secured thereto, a friction-clutch secured to said shaft, a spring-actuated lever adapted to control said clutch, and a bar provided with a notch adapted to bear against the lower end of the said lever and movable transversely of said lever, substantially as shown and described.

3. The combination with a rotating shaft, of a propeller mounted thereon, pinions journaled freely on said shaft, a sleeve having a longitudinal movement on the shaft and adapted to engage said pinions, laterally-toothed gears provided with oppositely-arranged ratchet-teeth on their peripheries, and a pivoted lever provided with pawls adapted to engage the teeth of said gears, substantially as shown and described.

4. The combination with a rotating shaft, of a propeller secured thereto, pinions journaled freely on said shaft, laterally-toothed gears engaging said pinion, a sleeve movable longitudinally on said shaft, a friction-clutch secured to said shaft, and mechanism connected with said sleeve and clutch adapted to engage said clutch when the sleeve is free from engagement with said pinion, substantially as shown and described.

5. The combination with a rotating shaft, of a propeller secured thereto, pinions journaled freely on said shaft laterally-toothed gears engaging said pinions, a sleeve movable longitudinally on said shaft, a friction-clutch secured to the shaft, and mechanism connecting said sleeve and clutch adapted to release the clutch when said sleeve is in engagement with either of said pinions, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NELS JOHNSON.

Witnesses:

MARTIN BERG,
OLE BAKKE.