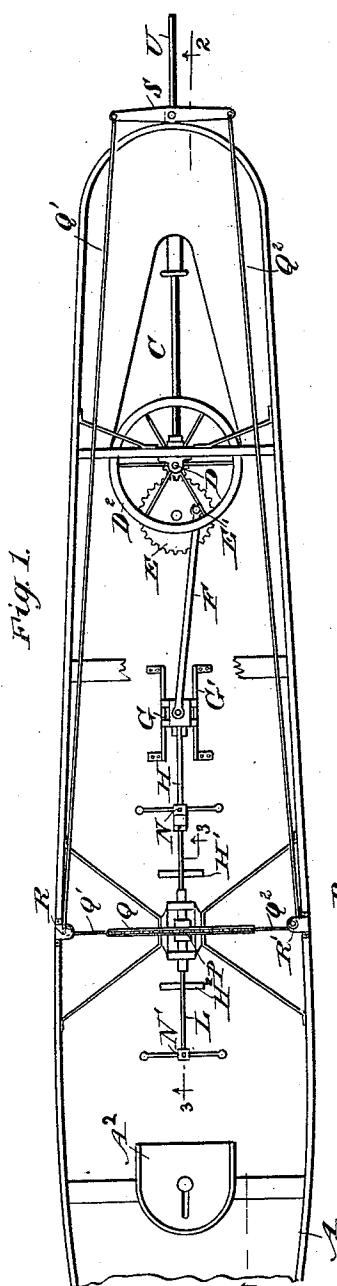


J. C. LUENEBURG.
MOTOR.

Patented Nov. 1, 1892.



J. W. Griswold.
C. Sedgwick

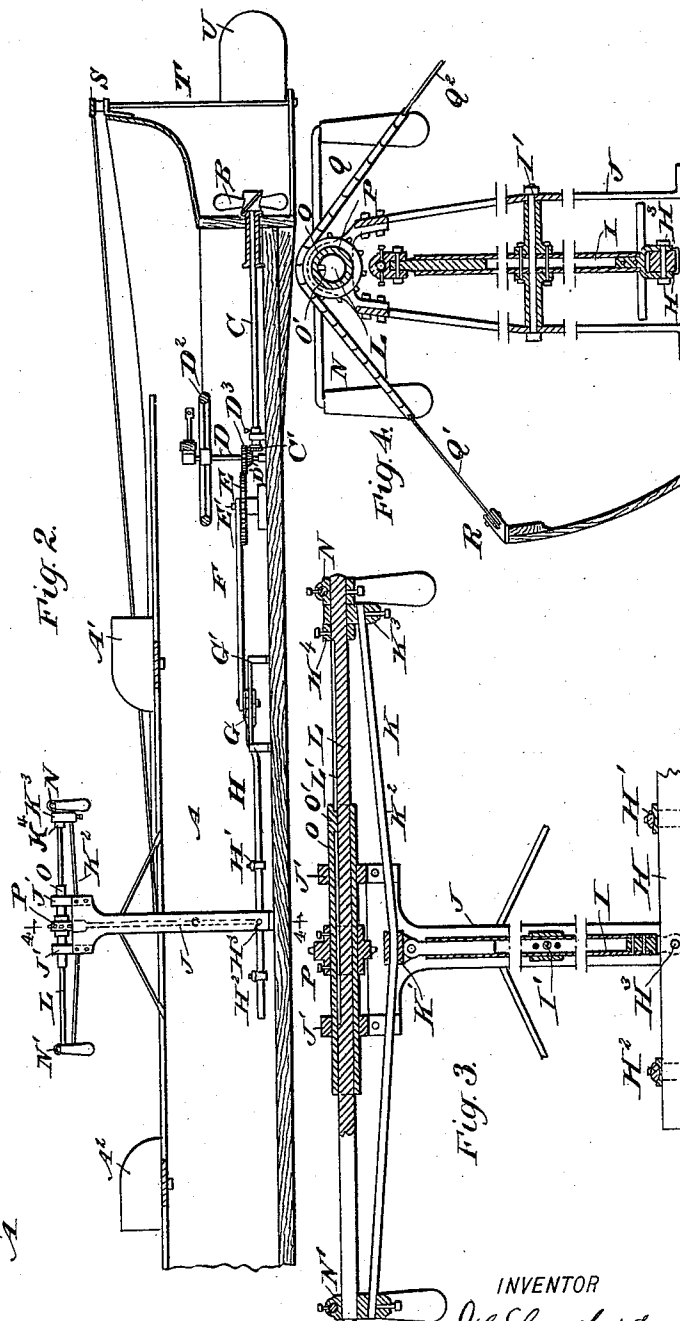


Fig. 3.

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MOTOR.

SPECIFICATION forming part of Letters Patent No. 485,419, dated November 1, 1892.

Application filed March 18, 1892. Serial No. 425,425. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. LUENEBURG, of Lakefield, in the county of Jackson and State of Minnesota, have invented a new and Improved Motor, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved motor which is simple and durable in construction, very effective in operation, and designed for driving machinery, such as is employed for propelling vessels and vehicles.

The invention consists of a slide provided with foot-rests and pivotally connected with a lever and a frame fitted to slide longitudinally and connected with the said lever.

The invention also consists of certain parts and details and combinations of the same, as will be hereinafter described, and then pointed out in the claims.

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

Figure 1 is a plan view of the improvement as applied to a marine vessel. Fig. 2 is a sectional side elevation of the same on the line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional side elevation of part of the improvement on the line 3 3 of Fig. 1, and Fig. 4 is a transverse section of the same on the line 4 4 of Fig. 2.

As illustrated in the drawings, the improved motor is applied to a boat A, provided with the usual propeller B, secured on the outer end of a propeller-shaft C, extending longitudinally and mounted to turn in suitable bearings in the boat A. On the inner end of the shaft C is secured a bevel gear-wheel C' in mesh with a bevel gear-wheel D', secured on the shaft D, arranged vertically and mounted to turn in suitable bearings within the boat A.

On the shaft D is secured a fly-wheel D² and also a pinion D³ in mesh with a gear-wheel E, provided on its upper face with a wrist-pin E', connected by a pitman F with a cross-head G, fitted to slide longitudinally in suitable guideways G', secured to the bottom of the boat A. The cross-head G is connected with a longitudinally-extending slide H, provided

with transversely-extending foot-rests H' and H², adapted to be engaged by the feet of the operators seated on the seats A' and A², respectively, held in the boat A.

The slide H is pivotally connected at H³ with a lever I, arranged vertically and pivoted at I' to a suitable framework J, erected within the boat A. The pivotal connection at H³ is located midway between the foot-rests H' and H², as plainly shown in the drawings. The upper end of the vertical lever I is pivotally connected with a collar K', held on a rod K², forming part of a frame K, adapted to be shifted longitudinally by the operators seated on the seats A' and A².

On the rear end of the rod K² is secured a collar K³ and which is mounted to turn loosely on a shaft L, extending longitudinally and provided at its rear end with a handle-bar N, extending transversely and adapted to be taken hold of by the operator seated on the seat A'. The front end of the shaft L is mounted to turn loosely in a handle-bar N', secured on the forward end of the rod K², and is adapted to be taken hold of by the operator seated in the seat A².

In front of the collar K³ is arranged a collar K⁴, secured to the shaft L to hold the said collar K³ in place between the handle-bar N and the collar K⁴. The shaft L is mounted to slide in a sleeve O, mounted to turn in suitable bearings J', arranged on the top of the frame J. On the rear end of the sleeve O is arranged or formed a key O', engaging a longitudinally-extending keyway L', formed in the shaft L. The key O' permits the shaft L to slide longitudinally in the sleeve O when the said shaft L is turned by either the handle-bar N or N', and the sleeve O is turned in a like direction, owing to its key O' engaging the keyway L'.

On the sleeve O between the two bearings J' is secured a sprocket-wheel P, over which passes a sprocket-chain Q, extending transversely and connected at its ends with the ropes or chains Q' and Q², extending to the sides of the boat A and passing under suitable pulleys R and R', respectively, mounted on the sides of the boat. The ropes or chains Q' and Q² then extend rearwardly and connect at their rear ends with the steering-tiller

S, held on the upper end of the stock T of the rudder U and mounted to turn in suitable bearings at the stern of the boat.

The operation is as follows: The operators
5 seated on the seats A' and A² work with their feet the foot-rests H' and H², so as to impart a longitudinal sliding motion to the slide H. At the same time the operators with their hands pull and push on the handle-bars N
10 and N', so as to impart a sliding motion to the shaft L and to the frame K, thus imparting by the said frame a swinging motion to the lever I, also connected with the slide H, thus adding force to the forward-and-back-
15 ward sliding motion of the slide H. The movement of the latter imparts a like sliding motion to the cross-head G, which by the pitman F imparts a rotary motion to the gear-wheel E, and the latter by being in mesh
20 with the pinion D³ imparts a rotary motion to the vertical shaft D. The motion of the latter is transmitted by the bevel gear-wheels D' and C' to the propeller-shaft C, so that the propeller B revolves in the water, thus prop-
25 pelling the boat A in the usual manner. In order to steer the boat in the desired direction, the operator, seated on the seat A' and looking forward, turns the handle-bar N, so as to revolve the shaft L in the manner above
30 described to impart a turning motion to the sleeve O. The sprocket-wheel P, secured on this sleeve O, is thus turned and imparts a traveling motion to the sprocket-chain Q, and consequently to the ropes or chains Q' and
35 Q², so that the lever S, attached to the rudder-shaft T, is turned and the rudder U is moved either to the right or left, according to the direction in which the operator turns the handle-bar N. By shifting the rudder to
40 either side the boat A will turn in the same direction in the usual manner.

It will be seen that an operator can easily exercise his muscular power without much exertion to rotate the shaft C, so as to propel
45 the boat forward or backward.

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

1. In a motor, the combination, with a slide
50 provided with foot-rests and connected with the machinery to be driven, of a lever pivotally connected with the said slide and a frame extending longitudinally and pivotally connected with the said lever, substantially as
55 shown and described.

2. In a motor, the combination, with a slide
provided with foot-rests and connected with the machinery to be driven, of a lever pivotally connected with the said slide, a frame
60 extending longitudinally and pivotally connected with the said lever, and handle-bars arranged on the ends of the said frame to be taken hold of by the operator engaging with

his foot the said foot-rests on the slide, substantially as shown and described.

3. A motor comprising a main driving-shaft and gear-wheels for imparting a rotary motion to the said shaft, a pitman connected with a wrist-pin on one of the said gear-wheels, a cross-head connected with the said
70 pitman, a slide attached to the said cross-head and provided with foot-rests, a lever extending vertically and pivotally connected with the said slide, and a frame provided with handle-bars and pivotally connected with the said lever, substantially as shown and de-
75 scribed.

4. A motor comprising a main driving-shaft and gear-wheels for imparting a rotary motion to the said shaft, a pitman connected
80 with a wrist-pin on one of the said gear-wheels, a cross-head connected with the said pitman, a slide attached to the said cross-head and provided with foot-rests, a lever extending vertically and pivotally connected with the said slide, a frame provided with handle-bars and pivotally connected with the said lever,
85 a shaft mounted to turn in the said frame, and a steering mechanism actuated from the said shaft, substantially as shown and de-
90 scribed.

5. In a motor, the combination, with a shaft mounted to slide and to turn and provided with a longitudinal keyway, of a sleeve
95 mounted to turn and provided with a key engaging the said keyway, a sprocket-wheel secured to the said sleeve, a sprocket-chain passing over the said sprocket-wheel, ropes or chains connected with the ends of the said sprocket-chain, and a rudder provided on its
100 shaft with an arm connected with the said ropes or chains, substantially as shown and described.

6. In a motor, the combination, with a slide adapted to actuate the machinery to be driven
105 and provided with foot-rests adapted to be engaged by the feet of the operators, of a lever arranged vertically and pivotally connected with the said slide, a frame extending longitudinally and connected with the said lever, a shaft mounted to turn in bearings on the said frame, a handle-bar held on the said
110 frame and forming a bearing for the said shaft, a second handle-bar attached to the said shaft for turning the latter, a sleeve through which passes the said shaft and provided with a key engaging a longitudinal groove in the said shaft, a sprocket-wheel held on the said sleeve, and a sprocket-chain
115 passing over the said sprocket-wheel and connected by ropes with the rudder, substantially as shown and described.

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Witnesses:

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