

(No Model.)

H. HEITMANN.

MOTOR.

No. 395,232.

Patented Dec. 25, 1888.

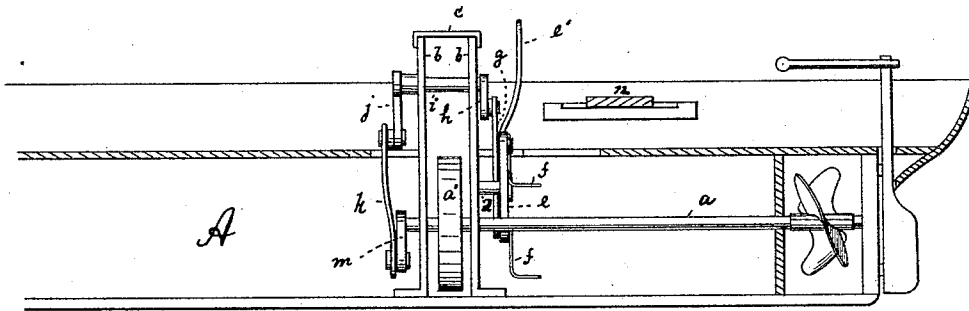


FIG. 1

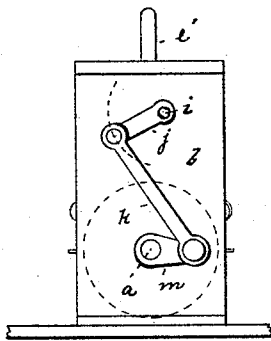


FIG. 2

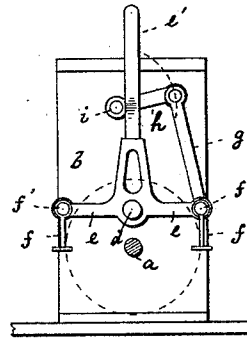


FIG. 3

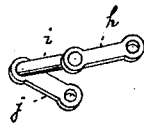


FIG. 4

WITNESSES

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MOTOR.

SPECIFICATION forming part of Letters Patent No. 395,232, dated December 25, 1888.

Application filed September 15, 1888. Serial No. 285,504. (No model.)

To all whom it may concern:

Be it known that I, HENRY HEITMANN, of New Rochelle, Westchester county, State of New York, have invented an Improved Motor, of which the following is a specification.

This invention relates to an improved motor especially applicable for revolving the propeller of a boat; but the motor may also be applied for other purposes—such as propelling a wagon—or it may be used as a stationary machine.

The invention consists in the various features of improvement more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal section of a boat provided with my improved motor, showing the latter in side view. Fig. 2 is a front view, and Fig. 3 a rear view, of the motor. Fig. 4 is a detail perspective view of the rock-shaft.

The letter A represents a boat having the propeller-shaft *a*. This shaft passes through the two uprights *b b*, which are connected on top by a cross-piece, *c*. Between the uprights *b b* the shaft *a* carries a fly-wheel, *a'*. In order to revolve the shaft *a*, I pivot to a pin, *d*, projecting from one of the uprights *b*, a foot-lever, *e*, to each end of which a treadle, *f*, is pivoted. One of the pivots *f'* of lever *e* connects one end of a link, *g*, to the foot-lever *e*, the other end of which link is pivoted to a crank, *h*, of a rock-shaft, *i*, resting in the uprights *b b*. The other end of shaft *i* has the crank *j*, connected by connecting-rod *k* with crank *m* on shaft *a*. The crank *h*, as well as the crank *j* of the shaft *i*, is longer than the crank *m* of shaft *a*, and both cranks *h j* project from their shaft *i* at a different angle.

n is the seat of the operator who bears with

his feet upon treadles *f*. The alternate raising and depression of the treadles will oscillate the lever *e*, and the link *g* will cause the crank *h* to move in the arc of the circle indicated by dotted lines in Fig. 2. Thus the rock-shaft *i* will impart a similar motion to crank *j*, and the latter will through rod *k* revolve the crank *m*, and consequently the shaft *a*. The fly-wheel *a'* carries the crank *m* over its dead-center. The crank *j*, being longer than the crank *m* and moving only in the arc of a circle, prevents said crank from ever being at its dead-center, while the fly-wheel *a'* carries the crank *m* over its dead-center. The foot-lever *e* may also be provided with a hand-bar, *e'*.

What I claim is—

1. The combination of pivoted bar *e* with link *g*, rock-shaft *i*, having cranks *h j*, and with connecting-rod *k*, crank *m*, shaft *a*, and fly-wheel *a'*, substantially as specified.

2. The combination of pivoted bar *e*, having pivoted treadles *f*, with the link *g*, connected to pivot *f'*, and with the rock-shaft *i*, having cranks *h j*, and with connecting-rod *k*, and crank *m*, shaft *a*, and fly-wheel *a'*, substantially as specified.

3. The combination of pivoted bar *e* with the link *g*, pivoted thereto, and with a rock-shaft, *i*, having a pair of cranks, *h j*, and with the revolving shaft *a*, having crank *m*, that is connected to crank *j* by connecting-rod *k*, and with fly-wheel *a'*, all being so constructed that the cranks *j h* are longer than crank *m*, substantially as specified.

HENRY HEITMANN.

Witnesses:

F. V. BRIESEN,
A. JONGHMANS.