

No. 640,513.

Patented Jan. 2, 1900.

P. E. DOEGE.  
PROPULSION OF BOATS.

(Application filed May 1, 1899.)

(No Model.)

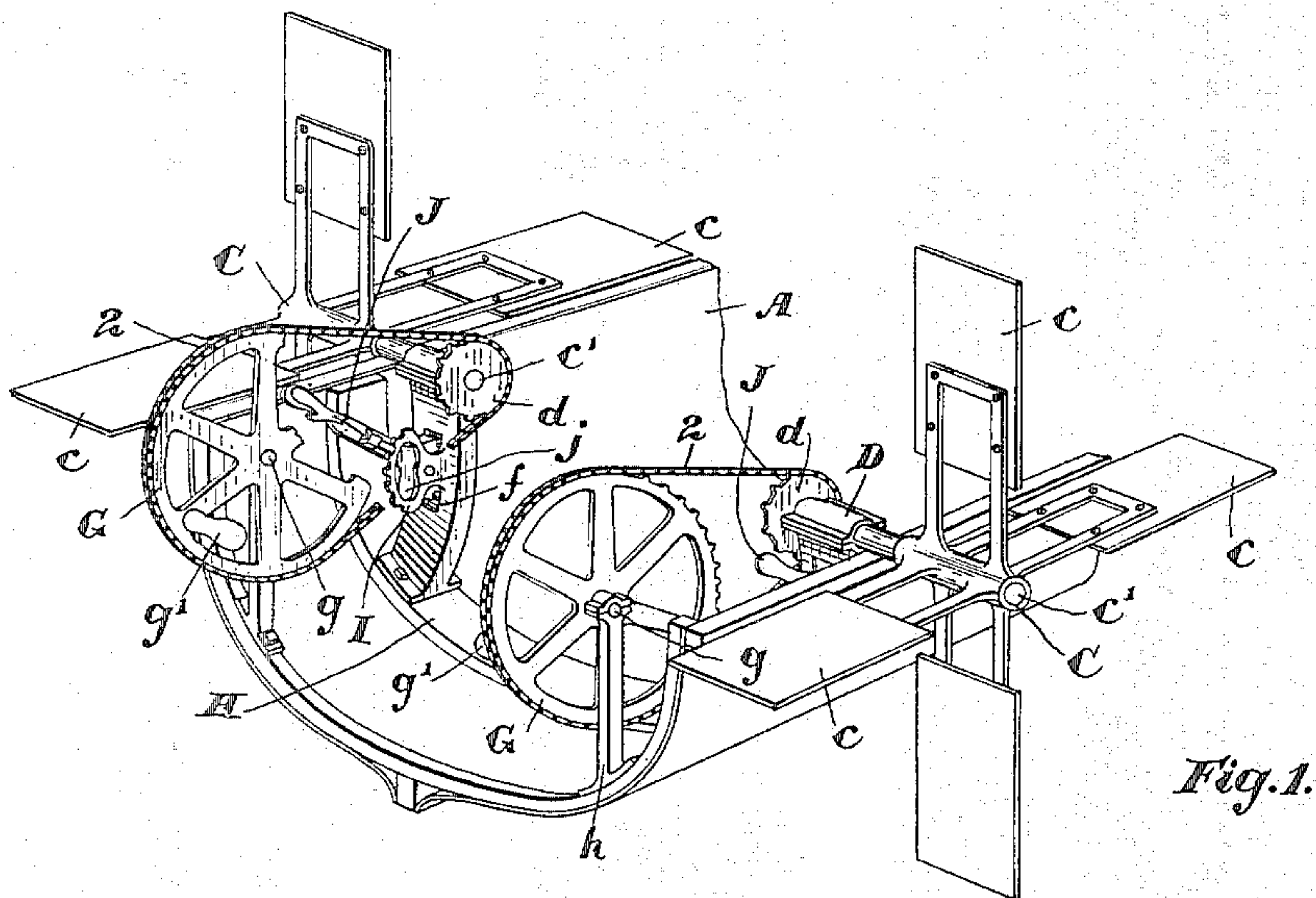


Fig. 1.

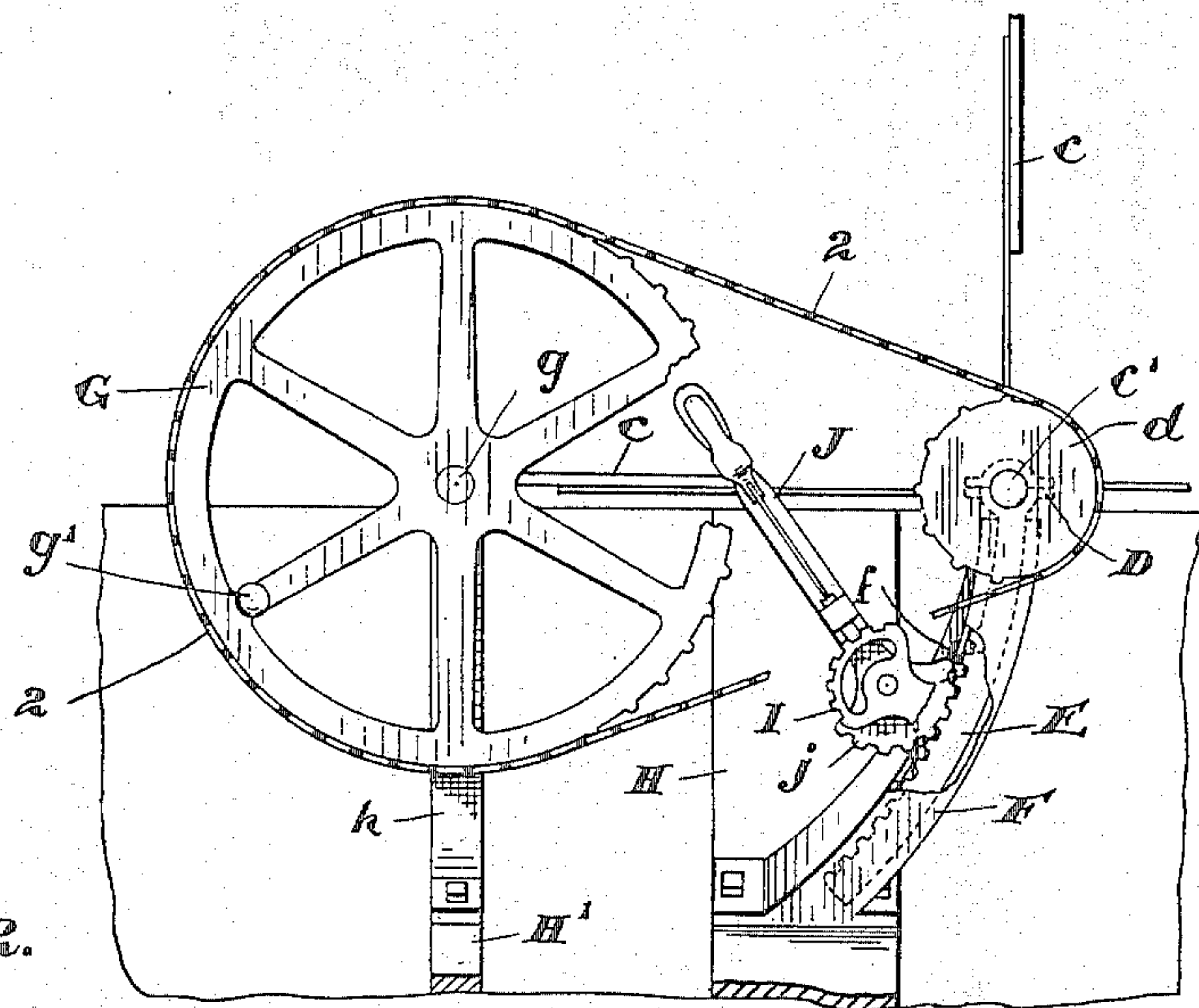


Fig. 2.

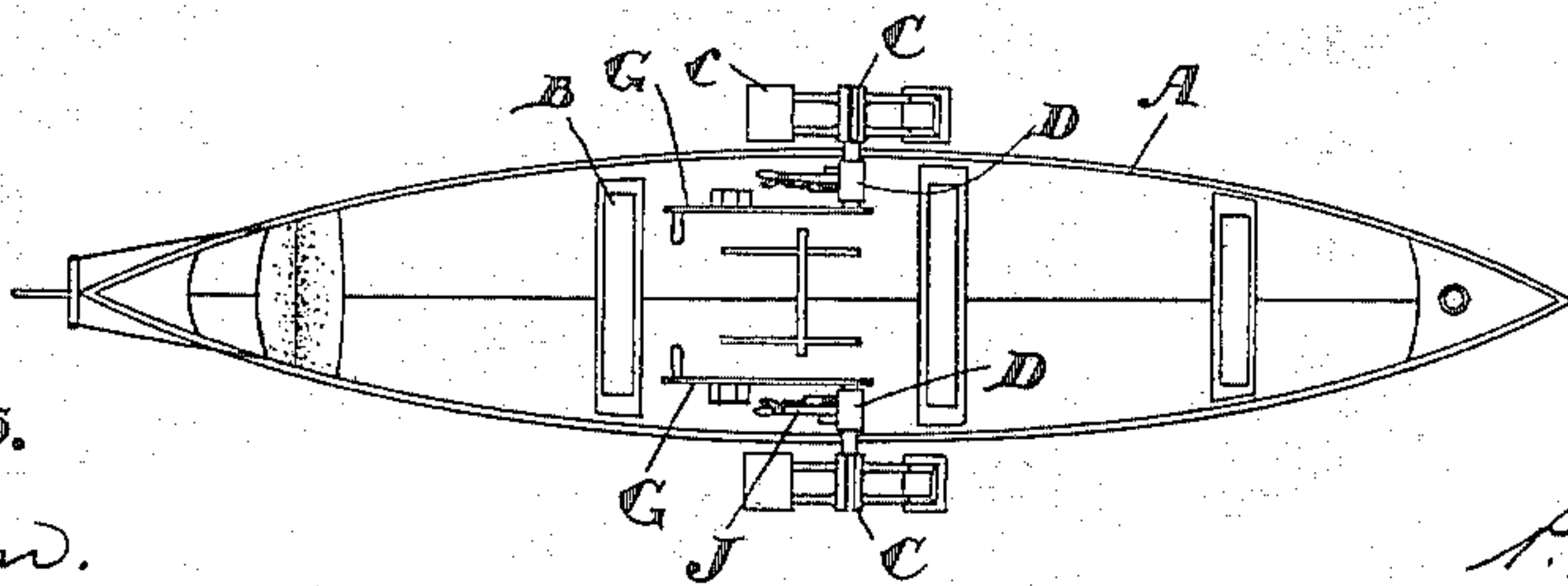


Fig. 3.

Witnesses.

H. Morrison.

J. H. W. Adams.

Inventor.

P. E. Doege.

By Fetherstonhaugh & Co.  
Atty's.



# UNITED STATES PATENT OFFICE.

PAUL EMIL DOEGE, OF TORONTO, CANADA.

## PROPULSION OF BOATS.

SPECIFICATION forming part of Letters Patent No. 640,513, dated January 2, 1900.

Application filed May 1, 1899. Serial No. 715,250. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL EMIL DOEGE, farmer, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in the Propulsion of Boats, of which the following is a specification.

My invention relates to improvements in propulsion of boats; and the object of the invention is to devise a simple means for propelling a boat by paddles and a simple means for adjusting the paddles vertically for shallow water; and it consists, essentially, of two paddle-wheels having the axle thereof journaled in bearings at the top of an adjustable rack held in the standard, the inner ends of the axle of the paddle-wheels having sprocket-wheels which are connected to major sprocket-wheels journaled in suitable standards secured in the interior of the boat, such major sprocket-wheels being provided with suitable handles whereby the required propulsion may be given to the paddles, as hereinafter more particularly explained.

Figure 1 is a perspective view of a portion of a boat, showing my improved form of drive. Fig. 2 is a longitudinal section showing the standard partially broken away to show the form of the rack. Fig. 3 is a plan view of the boat complete.

In the drawings like letters and figures of reference indicate corresponding parts in each figure.

A is the boat, and B the seat from which the power is applied.

C are the paddle-wheels, provided with suitable blades *c* and each secured on the ends of an axle *c'*, which is journaled in the bearing-box D, attached to or forming part of the upper end of the toothed rack E, which fits into a suitable socket-standard F. Both rack and standards are preferably formed concentric to the axis of the major sprocket-wheel G.

I provide a paddle-wheel at each side of the boat with corresponding supporting-standards quite independent of each other. On the end of the axle *c'* I secure the minor sprocket-wheels *d*.

The standards F are suitably bolted to a broad cross-rib H in the boat. H' is another cross-rib, upon which are secured the standards *h*, at the tops of which are journaled

the axles *g* of the major sprocket-wheels G. The major sprocket-wheels on each side of the boat are connected to the minor sprocket-wheels *d* by the sprocket-chains 2. Each major sprocket-wheel is provided with a propelling-handle *g'*.

I is a quadrant forming part of the socket-standards F, and J is a lever provided with the usual spring-plunger designed to engage with one of the notches of the quadrant I. The lower end of the lever is formed in the shape of a quadrant *j* and extends through a slot *f* in the standard F and meshes with the toothed rack E.

In deep water of course the axle of the paddles may be left in the position shown in the drawings—that is, close to the gunwale of the boat; but in shallow water it is necessary to raise the paddles, and in order to readily do this it is simply necessary to operate the levers J so as to throw the plunger thereof downwardly upon the quadrant I, when the rack E will be correspondingly raised, and consequently raise the journal-bearings of the axles of the paddle-wheels to any degree of height that may be found necessary.

It will thus be seen from the construction I have described that I provide a very simple means for propelling the boat which does not interfere with the passage of the occupant from one end to the other and yet is very efficient and suitable for hunting purposes, especially in narrow and shallow streams where oars cannot be used.

It will be seen that as the minor sprocket-wheels are adjusted concentrically the chain will not become slack, but remain of uniform tension.

What I claim as my invention is—

1. In combination the independent paddle-wheels located one on each side of the boat, the axles for same extending inwardly as shown, the racks provided with suitable journal-bearings at the top thereof for the axles of the paddle-wheels, the socket-standards, the sprocket-wheels on the ends of the axles, and means for driving the sprocket-wheels and means for vertically adjusting the racks in their respective standards as and for the purpose specified.

2. In combination the independent paddle-wheels located one on each side of the boat,



the axles for same extending inwardly as shown, the racks provided with suitable journal-bearings at the top thereof for the axles of the paddle-wheels, the socket-standards, 5 the sprocket-wheels on the ends of the axles, means for driving the sprocket-wheels independently as specified, the quadrant forming part of the standard, the lever pivoted on the said quadrant and having a spring-plunger

adapted to engage with the notches thereof, 10 and a quadrant formed on the inner end of the lever and meshing with the racks in the concentric socket-standards as and for the purpose specified.

PAUL EMIL DOEGE.

Witnesses:

B. BOYD,  
W. ARMS.