

No. 675,201.

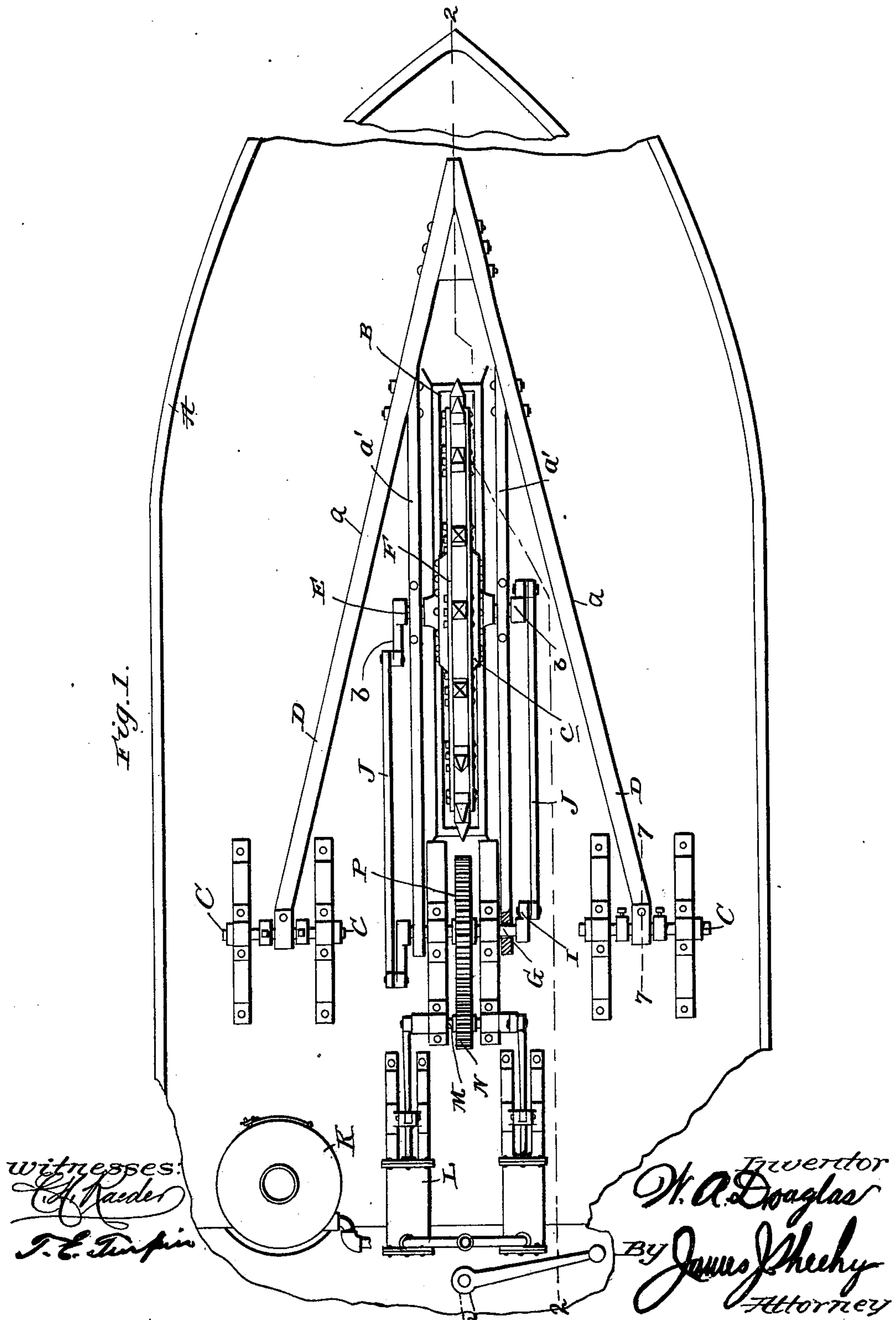
Patented May 28, 1901.

W. A. DOUGLAS.
BOAT.

(Application filed Jan. 24, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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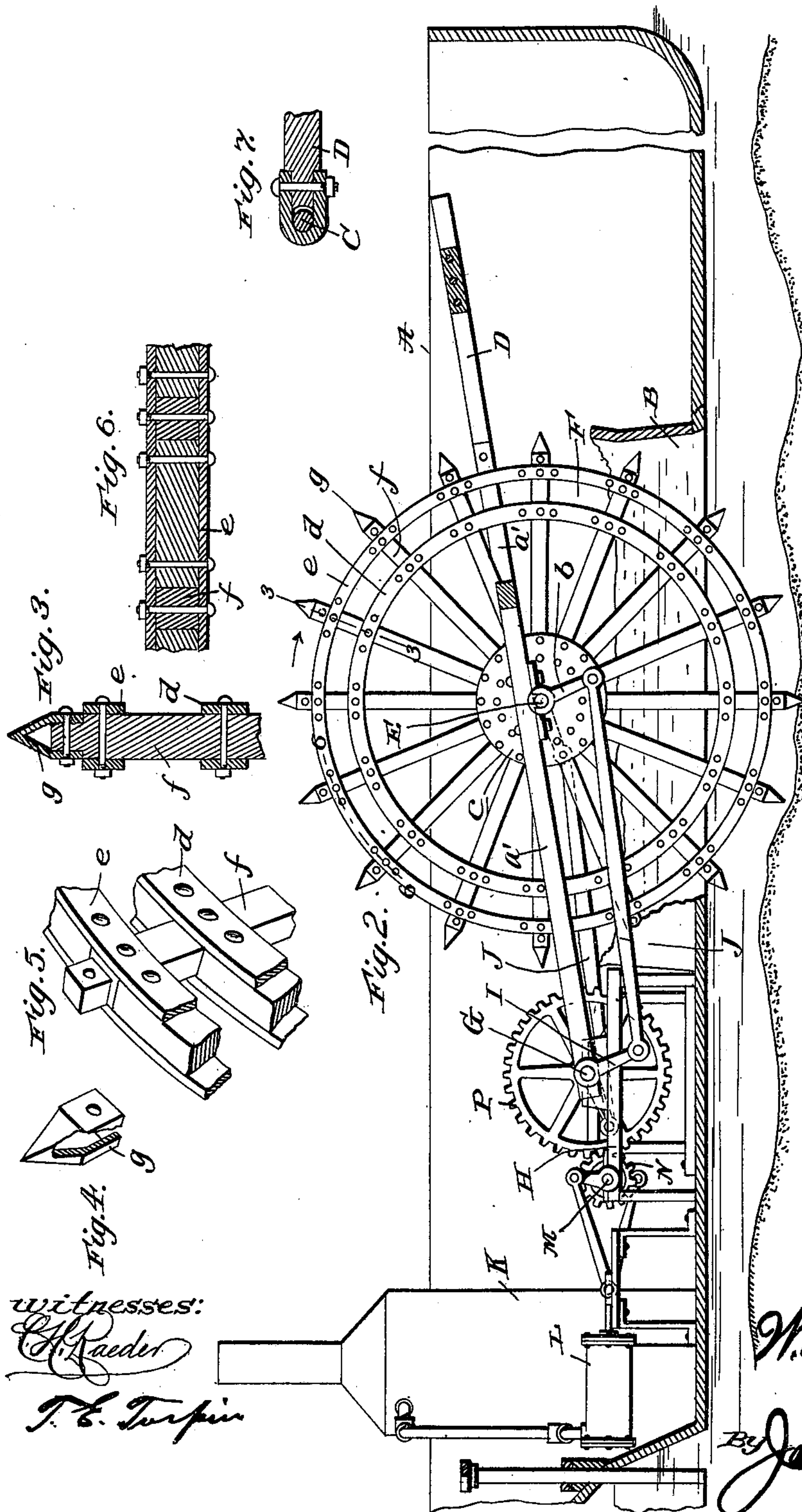
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

WILLIAM A. DOUGLAS, OF MONROE, WASHINGTON.

BOAT.

SPECIFICATION forming part of Letters Patent No. 675,201, dated May 28, 1901.

Application filed January 24, 1901. Serial No. 44,611. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. DOUGLAS, a citizen of the United States, residing at Monroe, in the county of Snohomish and State of Washington, have invented new and useful Improvements in Boats, of which the following is a specification.

My invention relates to improvements in boats; and it consists in the peculiar and advantageous boat, hereinafter described and claimed, for navigating and transporting freight on shallow and swift-running streams.

In the accompanying drawings, Figure 1 is a plan view of a boat embodying my invention, with portions of the hull broken away. Fig. 2 is a vertical longitudinal section taken on the broken line 2 2 of Fig. 1, with the well partly broken away. Fig. 3 is an enlarged detail section taken in the plane indicated by the broken line 3 3 of Fig. 2. Fig. 4 is a perspective view, partly in section, illustrating one of the points of the propelling-wheel. Fig. 5 is a detail perspective view illustrating a portion of the propelling-wheel. Fig. 6 is an enlarged detail section taken on the broken line 6 6 of Fig. 2; and Fig. 7 is a detail section, on an enlarged scale, taken in the plane indicated by the broken line 7 7 of Fig. 1.

In the said drawings similar letters of reference designate corresponding parts in all of the several views, referring to which—

A is the hull of my improved boat, which is provided in the longitudinal center of its bottom with a well B, rising a suitable distance above said bottom.

C C are shafts disposed transversely in suitable bearings arranged at opposite sides of and slightly in rear of the well B.

D is a V-shaped vertically-movable frame having side bars *a* pivotally connected at their rear ends to the shafts C and also having inner parallel bars *a'*.

E is a shaft journaled in suitable bearings on the inner bars *a'* of the frame D and having cranks *b* at its ends, preferably disposed as shown, and F is a propelling-wheel which is fixed on and adapted to turn with the said shaft. The propelling-wheel is preferably made up of a hub *c*, inner and outer parallel bands *d e*, radial spokes *f*, which are fixed in

the hub and are interposed between and connected by bolts to the inner and outer band *d e*, and points *g*, which are preferably secured on the outer reduced ends of the spokes in such manner as to permit of them being readily removed to be sharpened or repaired.

G is a shaft journaled in suitable bearings on a frame H, located in rear of the well B and provided with cranks I, preferably disposed as shown.

J J are pitmen connecting the cranks I of shaft G and the cranks *b* of the wheel-shaft E.

K is a steam-generator.

L is an engine connected with the generator and having a drive-shaft M, and N P are intermeshed gear-wheels fixed on the shafts M G, respectively, whereby it will be seen that when the engine is in action the propelling-wheel F will be rotated and the boat moved forwardly or backwardly, as desired.

The wheel F is arranged to turn in the well B and engage the bed or bottom of a shallow stream, and consequently it will be seen that when the said wheel is rotated in the direction indicated by arrow in Fig. 2 the boat will be moved forwardly, while when the wheel is rotated in the opposite direction the boat will be backed. It will also be seen that when the wheel F is stopped and held against turning it will serve in turn to anchor and hold the boat against movement, notwithstanding the swiftness of the current of the stream.

The arrangement of the propelling-wheel F in the vertically-movable frame D enables the said wheel to accommodate itself to different depths of water and irregularities of the bed or bottom of the stream and also enables the said wheel to always rest on the bed or bottom of the stream, whereby it will be seen that its weight is removed from the hull and the boat is adapted to carry a greater amount of freight than would otherwise be the case. The propelling-wheel being carried by the vertically-movable frame and adapted to always rest on the ground, it follows that not only the weight of the wheel, but also the weight of the said frame, is removed from the hull, so that the only weight which the latter has to sustain is the generator and engine. This is obviously advantageous, because it

enables the boat to carry a large amount of freight with the consumption of but a minimum amount of fuel.

By virtue of the vertical movable frame D being V-shaped it will be observed that it takes up but a minimum amount of space in the forward portion of the hull and does not materially reduce the freight-carrying capacity thereof.

While I prefer to employ a steam-engine as the motor for driving the propelling-wheel of my improved boat, I do not desire to be understood as confining myself to the same, as any other motor suitable to the purpose may be employed without departing from my invention. I also do not desire to be understood as confining myself to the specific construction and relative arrangement of parts as hereinbefore described, as such changes or modifications may be made in practice as fairly fall within the scope of my claims.

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

1. In a boat for navigating shallow streams and other bodies of water, the combination of a hull having a longitudinal central oblong well at its bottom, a shaft journaled in suitable bearings on a support in the hull, the vertically-swinging frame having the parallel bars pivotally connected to the shaft, and the forwardly-converging bars pivotally connected to suitable supports in the hull at points at opposite sides of and coincident with the shaft, a shaft journaled in bearings on the

parallel bars of the frame, a propelling-wheel fixed on the shaft in the frame and extending through the well at the bottom of the hull, a driving connection between the first-named shaft and the shaft carrying the propelling-wheel, and suitable means for rotating the said first-named shaft.

2. In a boat for navigating shallow streams and other bodies of water, the combination of a hull having a longitudinal central oblong well in its bottom, a shaft journaled in suitable bearings on a support in the hull, and having cranks, shafts arranged at opposite sides of and coincident with the said crank-shaft, the vertically-swinging frame having the parallel bars pivotally connected to the crank-shaft, and the forwardly-converging bars pivotally connected to the shafts arranged coincident with the crank-shaft, a shaft journaled in suitable bearings on the parallel bars of the frame, and having cranks connected by pitmen with those of the crank-shaft, a propelling-wheel fixed on the shaft in the frame and extending through the well in the bottom of the hull, and having peripheral points arranged to engage the bed or bottom of the stream or other body of water, and a suitable motor for driving the crank-shaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM A. DOUGLAS.

Witnesses:

N. T. BRADLEY,
RICE C. KNAPP.