

No. 606,653.

Patented July 5, 1898.

C. J. D'URBAN.
DEVICE FOR PROPELLING SHIPS, &c.

(Application filed Oct. 6, 1897.)

(No Model.)

FIG. 1.

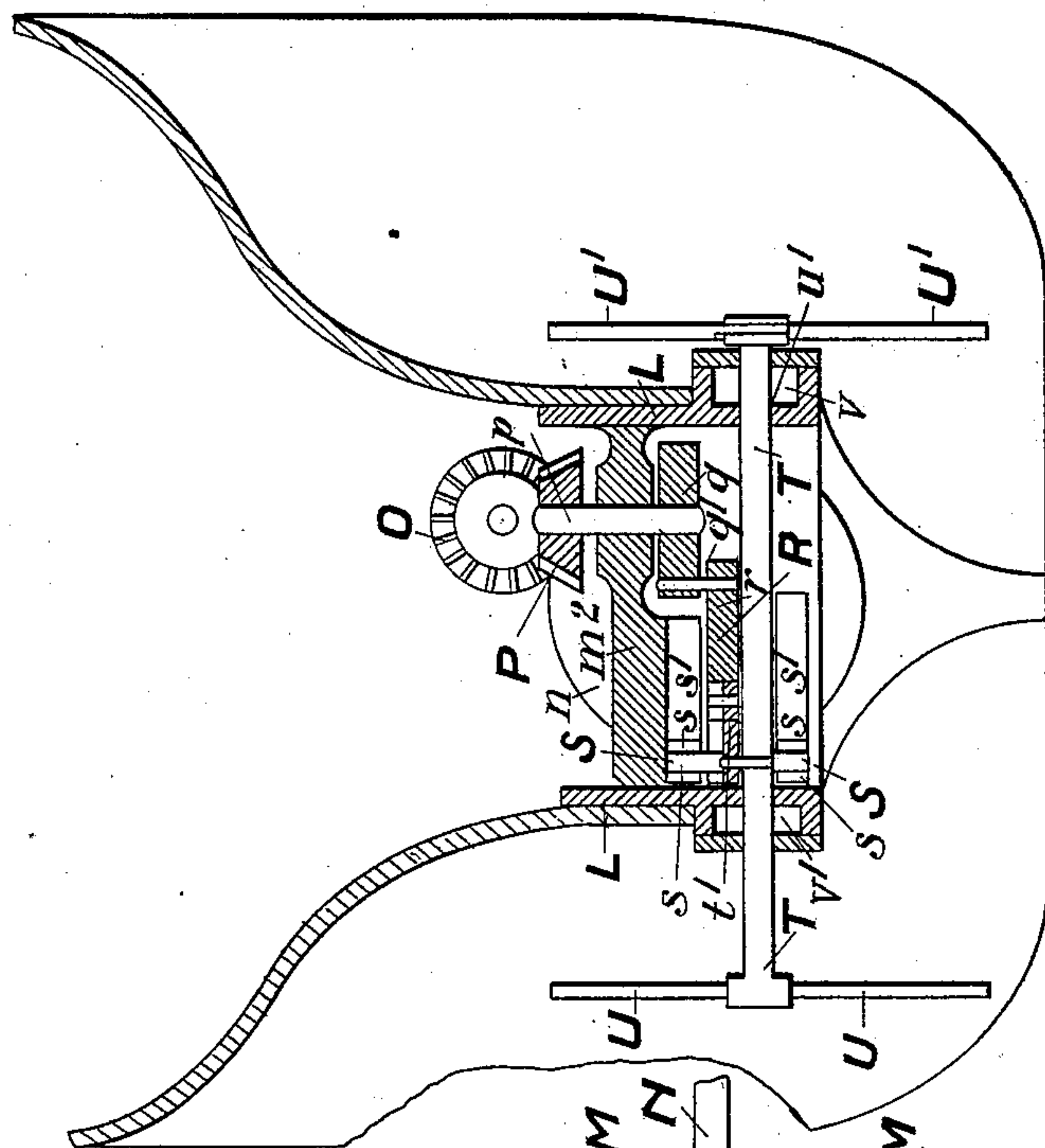


FIG. 3.

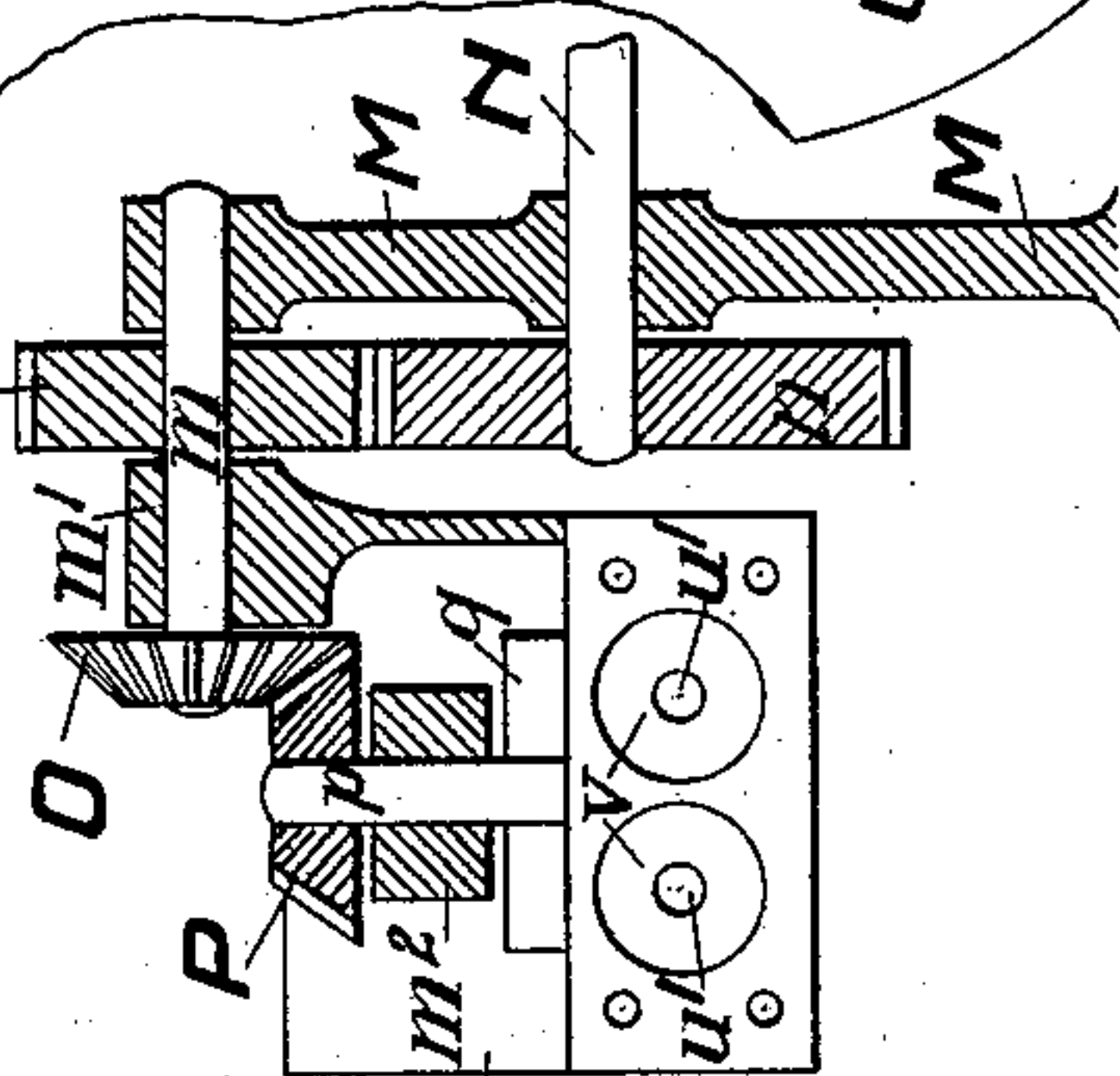
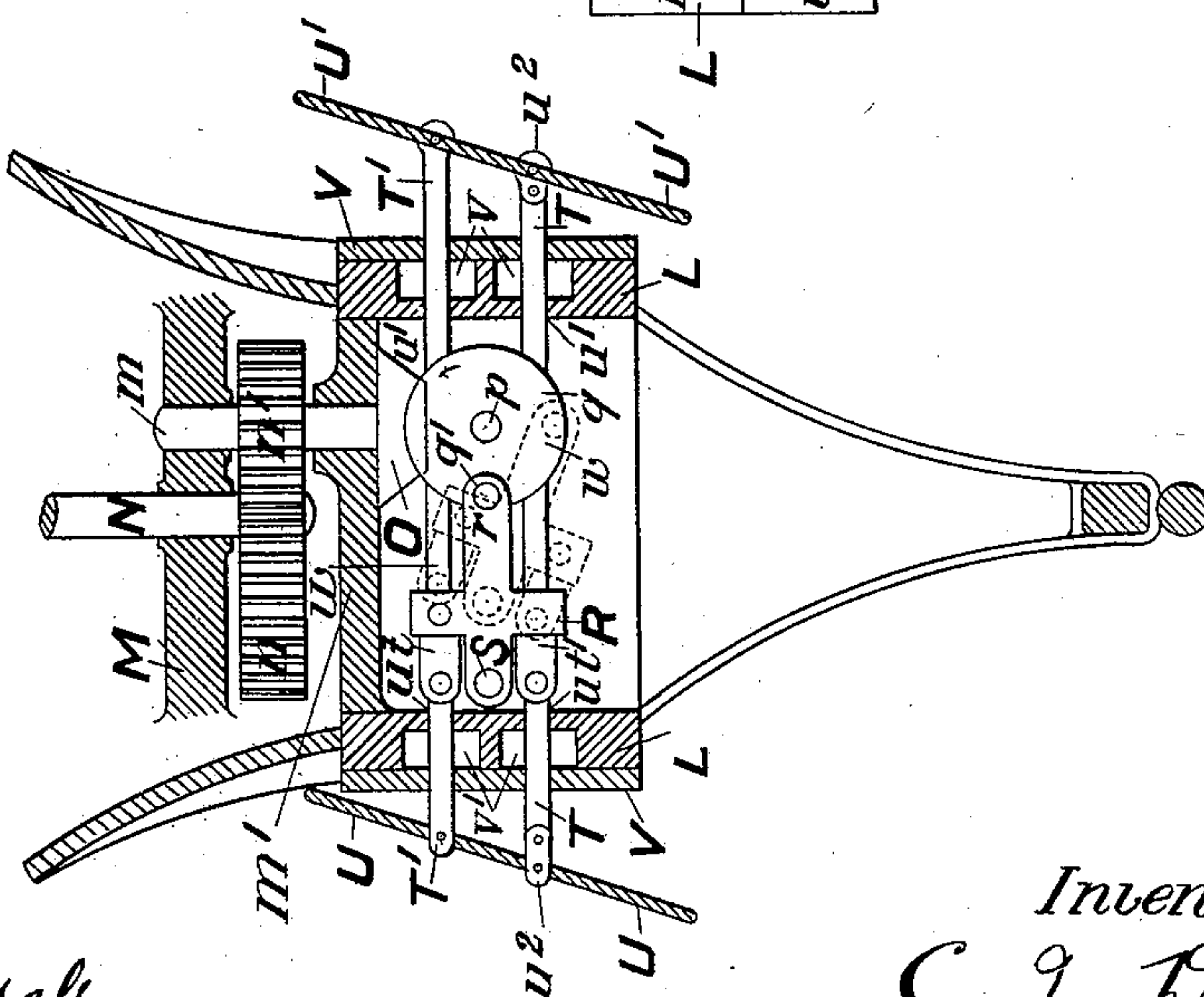


FIG. 2.



Witnesses
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CHARLES JAMES D'URBAN, OF JOHANNESBURG, SOUTH AFRICAN REPUBLIC.

DEVICE FOR PROPELLING SHIPS, &c.

SPECIFICATION forming part of Letters Patent No. 606,653, dated July 5, 1898.

Application filed October 6, 1897. Serial No. 654,266. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JAMES D'URBAN, a subject of the Queen of Great Britain, residing at Johannesburg, in the South African Republic, have invented new and useful Improvements in Means or Devices for Propelling and Maneuvering Ships, Boats, and the Like, of which the following is a specification.

10 This invention relates to an improved means, arrangement, or device for propelling and maneuvering ships, boats, yachts, torpedoes, launches, barges, flats, and other floating vessels or the like. It is designed with
15 the object of providing a comparatively simple and much more efficient means of propulsion, one which will place the vessel more completely under control, will effect a considerable saving in the power expended or
20 required in propelling the vessel, or with an equal expenditure of power will very materially increase its speed or rate of travel, and at the same time one in which the objectionable motion ordinarily transmitted to the vessel
25 inherent to the ordinary construction of screw-propeller will be eliminated or to a large extent obviated.

It consists, essentially, of a propelling device comprising a flat or approximately flat
30 blade or blades of suitable size and shape connected with a reciprocating rod or rods, to which motion may be imparted through the medium of a crank, eccentric, or other suitable arrangement, and in the construction
35 and general arrangement of the several parts, as set forth in the claims.

The invention will be more particularly described by aid of the sheet of drawings hereunto annexed, in which—

40 Figure 1 is a sectional elevation transversely of the vessel; Fig. 2, a sectional plan of same, and Fig. 3 a part sectional elevation of the gearing longitudinally of the vessel.

In the drawings, L is a rectangular framing
45 for carrying the driving mechanism, bolted, riveted, or similarly fitted in the vessel at the stern.

M is a separate suitably-arranged standard or support in which the main driving-shaft
50 N is journaled. To the end of the shaft N is affixed the spur-wheel n , gearing a pinion

or spur-wheel n' , attached to the shaft or spindle m , journaled in the standard M at its upper extremity on the one side and a part m' , fitted within the framing L, on the other. A
55 bevel-wheel O, securely affixed to the shaft m , gears or engages a corresponding bevel-wheel P, keyed or similarly attached to the vertical spindle p , supported by the part m^2 of the rectangular framing. To the other
60 extremity of the vertical spindle p , on the inside of the framing, is pinned the disk-crank q , the crank-pin q' of which forms the connection between it and the branch or arm r of the cross-head or connecting-piece R. A
65 pin or rod S, fitted in the cross-head R and provided with blocks or slippers s , working in grooves or recesses s' , formed in the part m^2 of the frame, is provided to steady and control the movement of the cross-head. 70

T T' are the propeller rods or shafts, and U U' the blades of the propeller, one disposed at either side of the vessel.

$t t'$ are links pivotally connected with the cross-head and with the propeller-rods T T'.
75 The rods T T' and the blades U U' are also pivotally connected either by means of links u^2 or direct to the blade to permit of a free movement about their points of attachment.

The framing L is at each side provided with
80 holes $u u'$, in which the propeller-rods work, and with recesses $v v'$, in which a suitable packing is placed to prevent the entrance of water, over which is bolted or otherwise secured the plate V. 85

In operation the disk-crank q is rotated through the spur-gearing $n n'$ and bevel-wheels O P, the cross-head R is drawn backward and forward by the crank-pin q' , and a much greater angular movement is alternately imparted to one of the links $t t'$ relative to the other, as shown in dotted lines at w , Fig. 2, and by it transmitted to the propeller-rod, to which it is pivotally connected.
90 The propeller-blades U U' have by this means a rocking or oscillating motion imparted to them, causing the forward or leading vertical edges of the blades to traverse an undulating path or line and the rear vertical edge or tip to traverse a corresponding path, but somewhat later in its stroke. 100

Having now particularly described and as-

certained the nature of the said invention and in what manner the same is to be performed; I declare that what I claim is—

1. In a device for propelling ships, boats and the like the combination of the vertical propelling-blades $U U'$, the connecting-rods $T T'$ pivotally connected thereto, the cross-head R and connecting-links $t t'$, and the disk-crank q coupled up with and driven by the main driving-shaft, substantially as described.

2. In a device for propelling ships, boats and the like the combination of the vertical propelling-blades $U U'$, the connecting-rods $T T'$ pivotally connected thereto, the cross-head R , connecting-links $t t'$, pin S , slippers or blocks s , the disk-crank q , spindle p , shaft m , bevel-gear $O P$, main driving-shaft N and spur-gear $n n'$, substantially as described and shown.

3. In combination, the rectangular framing L fitted in the stern of the vessel, the standard M , the main driving-shaft N journaled therein, the shaft or spindle m journaled in the standard M on the one side and a part m' fitted in the framing L on the other, the part

m' of the framing fitted within the rectangular framing L , the spur-wheels $n n'$ gearing the shafts N and m , the vertical spindle p supported by the part m^2 of the framing L , the bevel-wheels $O P$ gearing the shaft m with the spindle p , the disk-crank q , the cross-head R , the pin or rod S , the slippers or sliding blocks s working in grooves or recesses s' formed in the part m^2 of the frame, the grooves or recesses s' , the connecting-links $t t'$, the rods $T T'$ projecting through the holes $u u'$ in the sides of the frame L , the holes $u u'$ and circular recesses $v v'$ surrounding the same provided for the reception of a suitable packing, the caps or covers V , the links u^2 pivotally connected with the rods $T T'$ and the propelling-blades $U U'$, and the vertically-disposed propelling-blades $U U'$ substantially as described and shown.

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

CHARLES JAMES D'URBAN.

Witnesses:

G. I. FISCHER;

CHAS. OVENDALE.