

(No Model.)

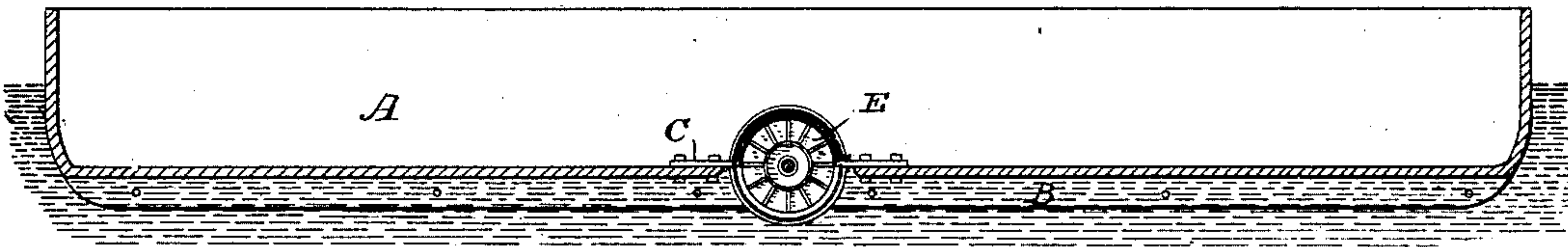
2 Sheets—Sheet 1.

P. O'CONNOR.  
CANAL BOAT PROPELLER.

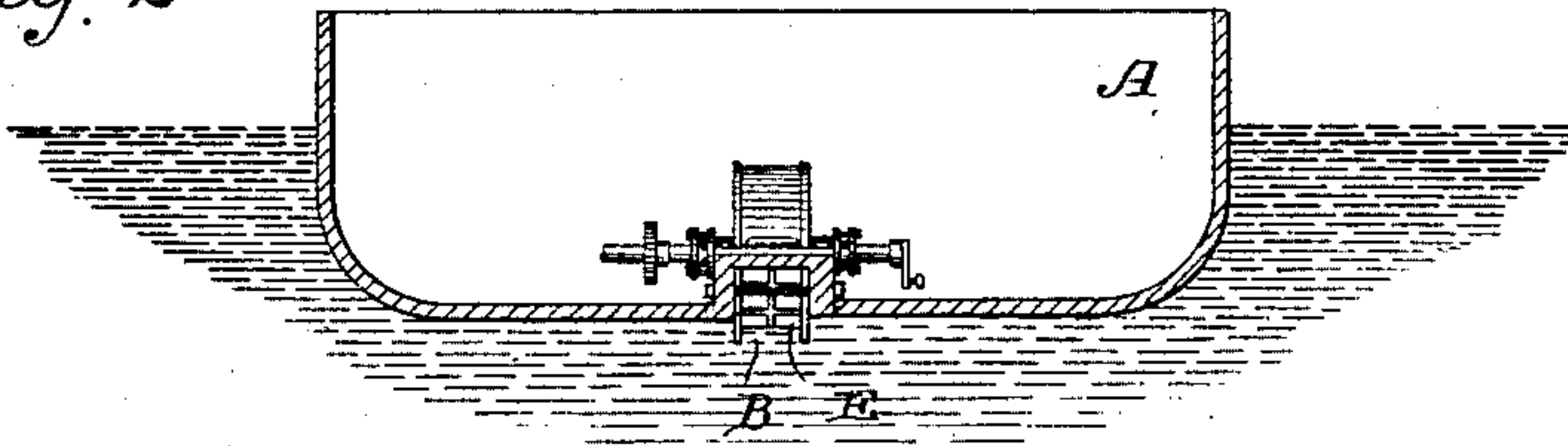
No. 315,159.

Patented Apr. 7, 1885.

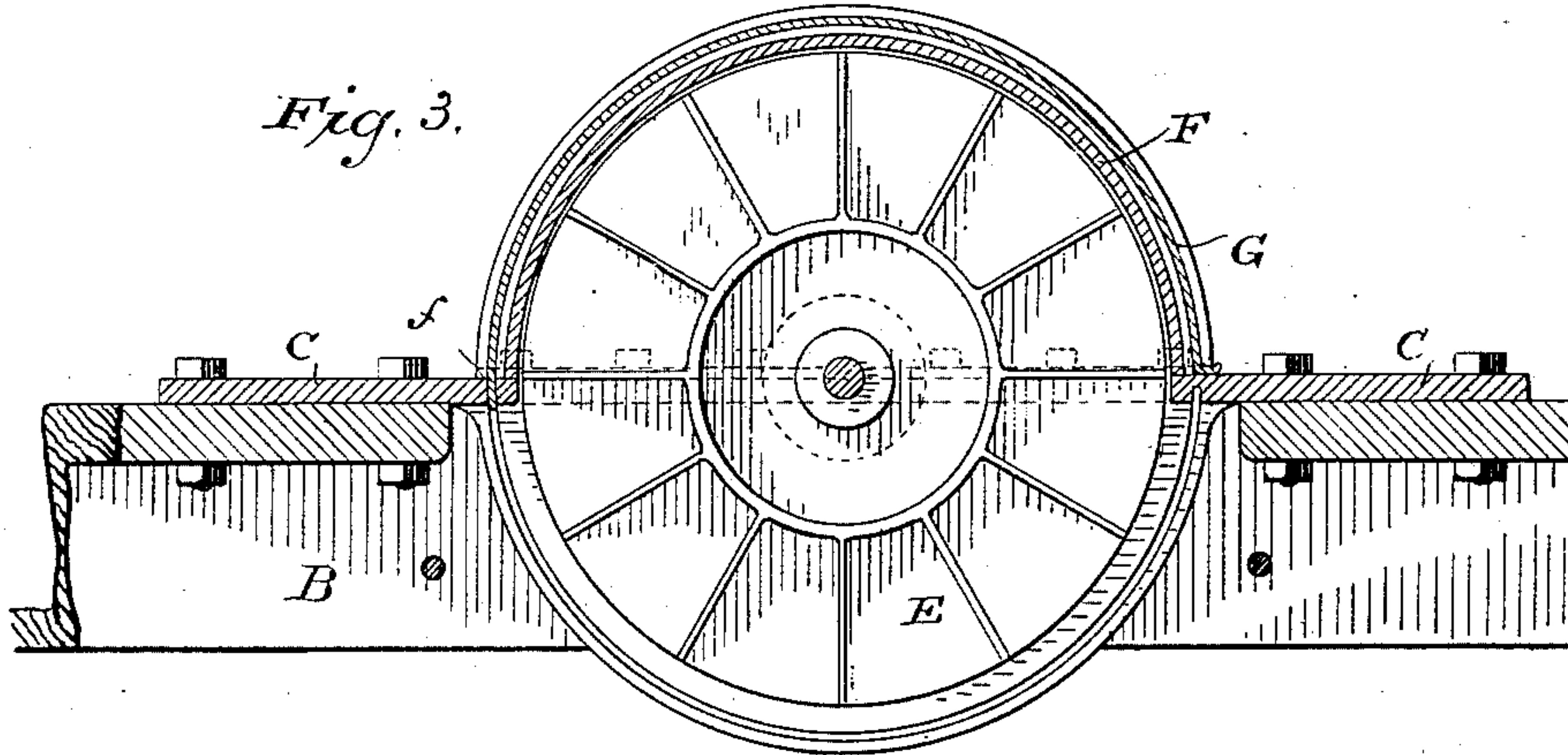
*Fig. 1.*



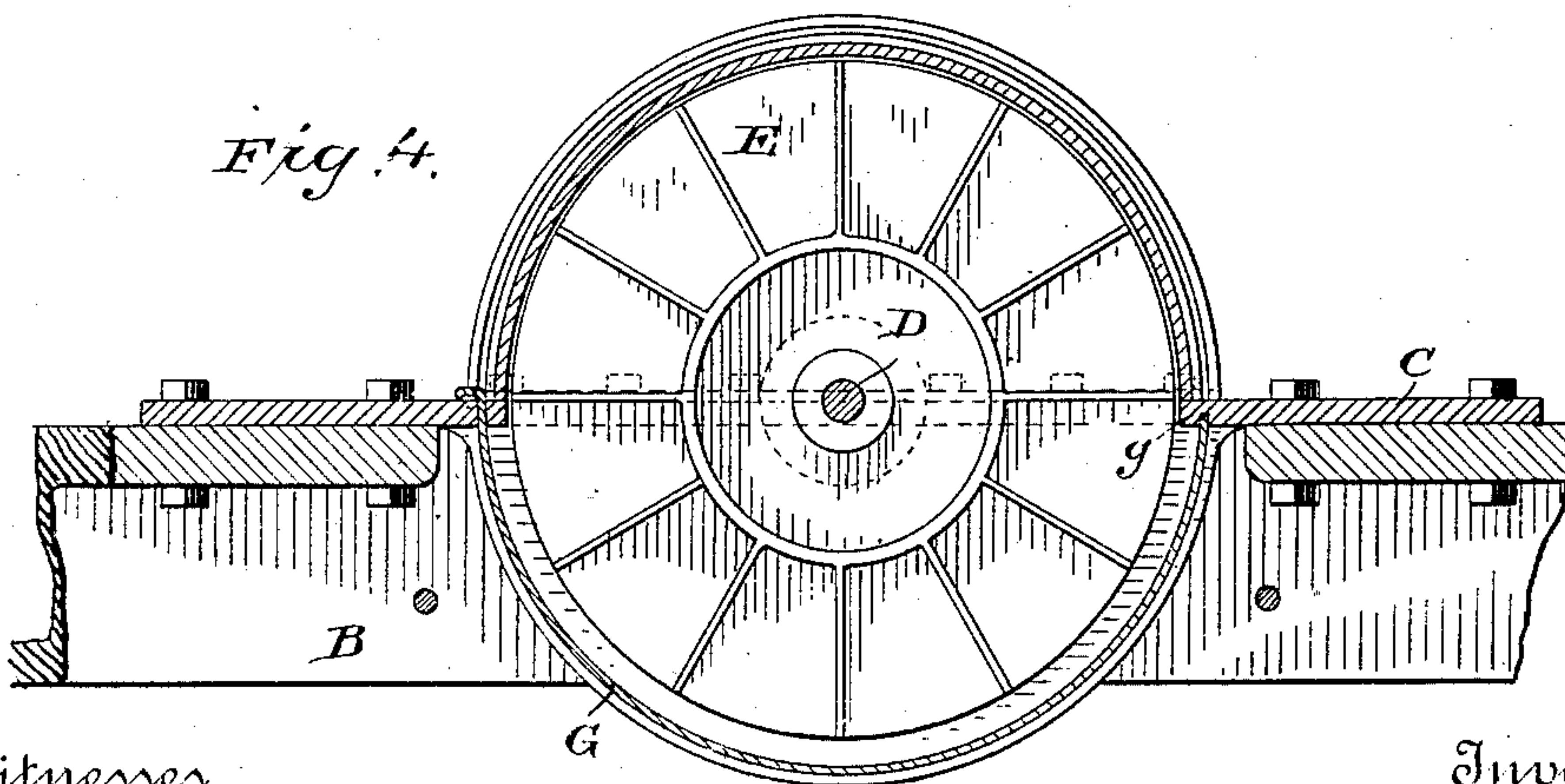
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses

*Geo W. Young.*  
*Henry A. Lamb.*

Inventor

*Patrick O'Connor*

By his Attorneys

*Jamies Skinkle*

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Fig. 5.

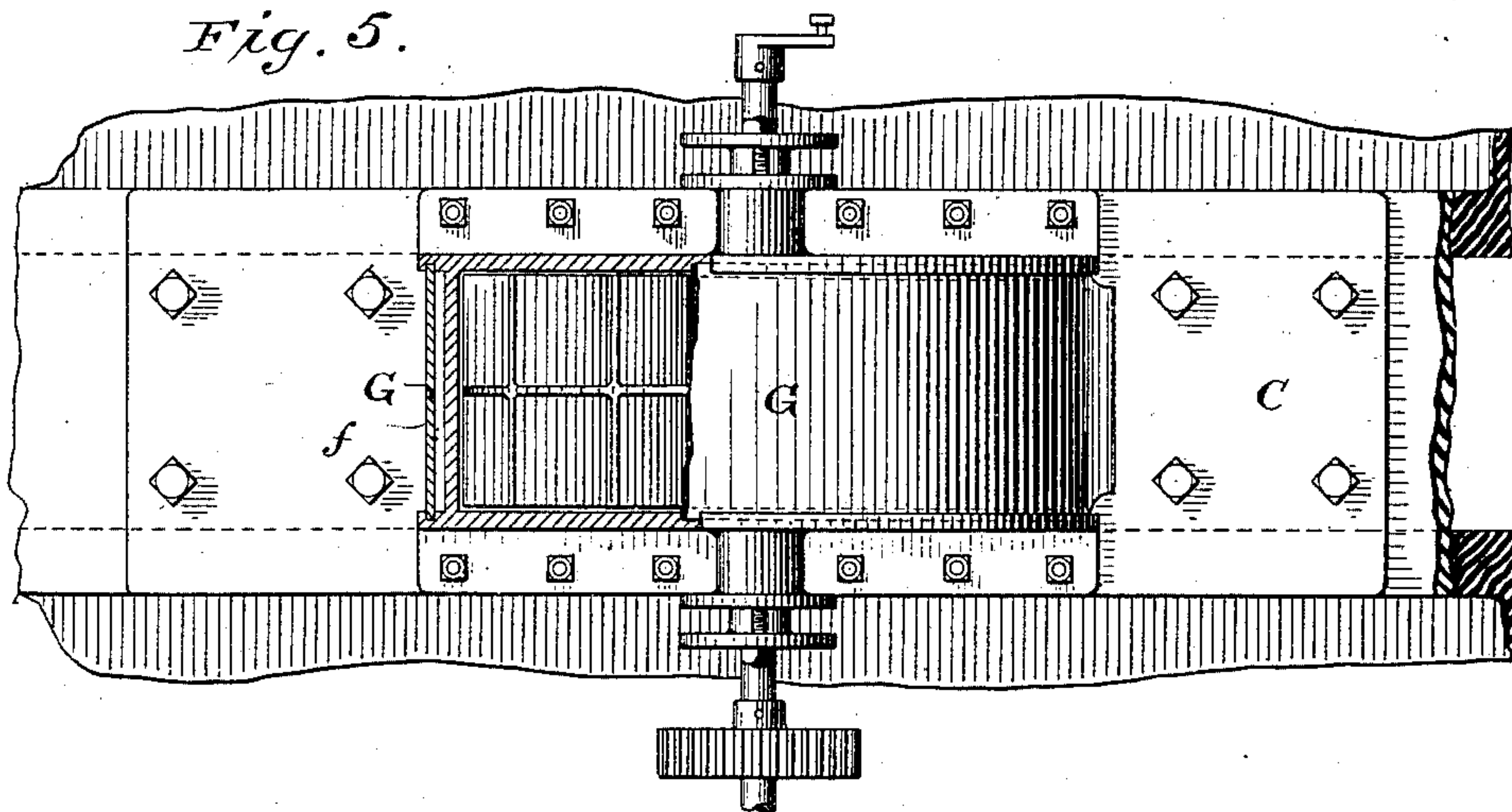


Fig. 6.

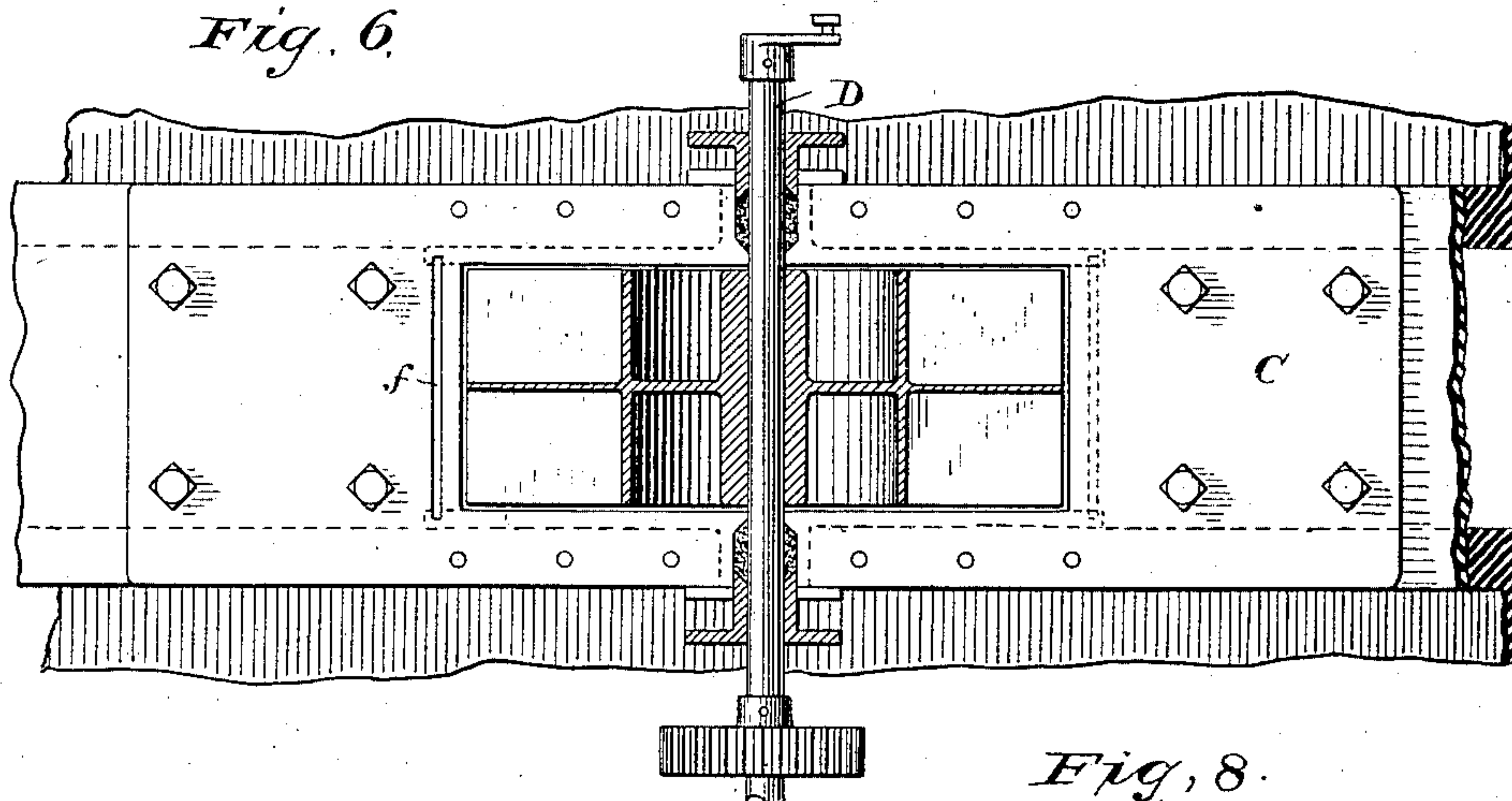
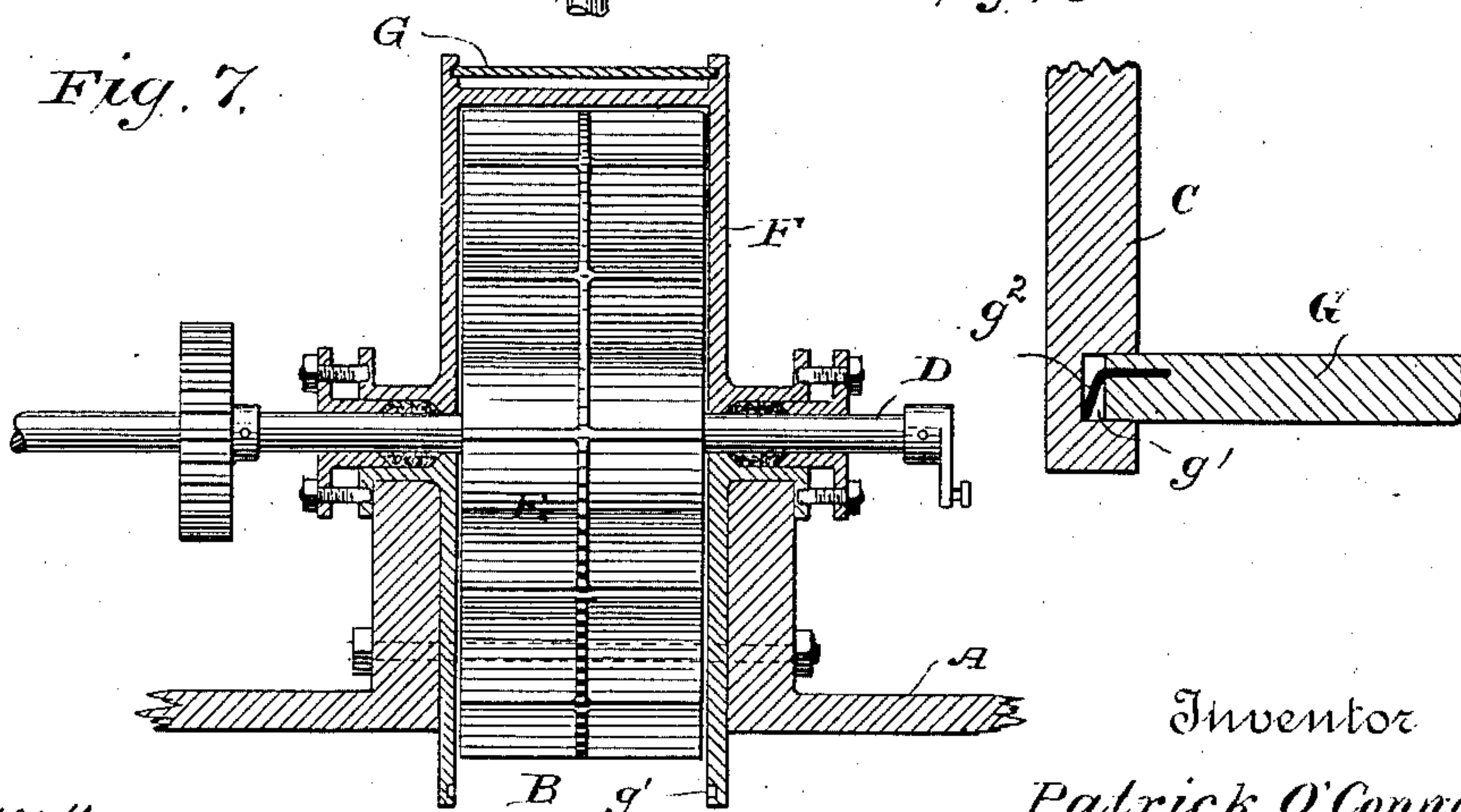


Fig. 8.

Fig. 7.



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# UNITED STATES PATENT OFFICE.

PATRICK O'CONNOR, OF MOUNT SAVAGE, MARYLAND, ASSIGNOR OF ONE-HALF TO JAMES T. O'CONNOR, OF SAME PLACE.

## CANAL-BOAT PROPELLER.

SPECIFICATION forming part of Letters Patent No. 315,159, dated April 7, 1885.

Application filed February 6, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, PATRICK O'CONNOR, a citizen of the United States, residing at Mount Savage, in the county of Alleghany and State of Maryland, have invented certain new and useful Improvements in Canal-Boat Propellers, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improved means for the propulsion of canal-boats or other vessels; and it consists, generally, of a paddle-wheel suitably mounted in the lower portion, and preferably at about the center of a boat and about midway between the bow and stern. The wheel itself may be of ordinary well-known construction, and it is so mounted that its operative portion moves in a channel formed to receive it in the bottom of the boat, where the keel is usually placed. I also provide means for entirely closing the lower portion of the wheel-space, so that when the cover, hood, or box, within which the upper portion of the wheel is inclosed to prevent the water entering the boat is removed the wheel itself can be taken out without admitting water.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of the hull of a boat having my improved wheel therein. Fig. 2 is a transverse section through the wheel. Fig. 3 is a detail view of the wheel, showing the movable shield for closing the channel below the wheel. Fig. 4 is a view similar to the above, showing the shield in its operative position. Fig. 5 is a top plan view of the wheel-box and bed-plate, partly broken away. Fig. 6 is a plan view with the wheel-cover removed. Fig. 7 is a vertical transverse section through the channel and wheel-box on the axial line of the wheel. Fig. 8 is a detail showing one edge of the shield, a groove in the bed-plate, and the packing.

Similar letters denote like parts.

A represents the hull of a boat, which is constructed with a longitudinal channel, B, in its lowest portion, where the keel would otherwise be placed.

C represents the bed-plate or frame-work located in the bottom of the boat and at about the center of the length thereof. D is an axle suitably mounted upon the said bed-plate, and

upon this axle is hung a paddle-wheel, E, of about the width of the said channel B, and of such diameter and so supported as to extend to about the edges of said channel, so that when suitable power is applied to said shaft and the wheel rotated the water in said channel will be acted upon by the wheel and the boat caused to move forward or backward, as desired. Above the wheel is placed a hood, cap, or cover, F, which fits closely down upon and is detachably secured to the bed-plate C, and it entirely envelops that portion of the wheel within the boat. This hood or cap is provided with suitable packing, so that when in position it will at all times exclude the water. At one side of said plate adjoining the wheel is formed a narrow slot, *f*, within which rests the end of a circular slide, G, which said slide follows the outline of the hood or wheel-cap F, and occupies but little space. A slot, *g*, corresponding in width to similar slots, *g'*, formed in the sides of the channel B, is located in the rear or at the opposite side of the wheel; and when it is desired to remove said wheel the said slide is pushed downward, following the slots *g'* in the channel B until it entirely incloses the lower portion of the wheel, when the end of the shield will come up to and fit into the slot *g*, where it may be secured. The slide will then entirely envelop the wheel, and also entirely close the channel B at that point. The cap F may then be removed and the wheel withdrawn without danger or inconvenience.

Instead of the arrangement just described, I sometimes provide extensions, prongs, or arms, which may be continuations of the shield G, or separate and flexibly connected to the outside corners of the end of the shield G, in which case the slot *g*, into which the end of the shield fits, would have to be provided with an aperture at each end, through which the said arms would be drawn to bring the shield into its operative position to close the space below the wheel. By making these arms sufficiently flexible, or by connecting them flexibly to the main body of the shield, such mobility will be secured as will enable me to move said arms far enough from this normal position to permit the removal of the wheel-cap F. By using these arms the channel *g'* is always



occupied, and thus kept free from dirt and grit, and when these arms are used I contemplate lining said grooves with some form of elastic packing that will exclude the water 5 when the shield is in position. With the shield G, without the arms, however, I prefer to use a simple strip of elastic material secured to the edges of the solid shield in such manner that it will offer practically no impediment to the motion of the shield; but when 10 the shield is in position will be tightened against the walls of the groove by the pressure of the water, as soon as the cap is removed. A suitable form of packing is shown at  $g^2$ , Fig. 8; but it is obvious that many forms of packing may be used to secure the desired 15 result without in any way departing from the spirit of my invention.

I contemplate increasing or decreasing the 20 relative sizes of the parts herein shown in accordance with the requirements of practice, my object being to provide means for propelling canal-boats without the sacrifice of too much cargo-space, and without the addition 25 of too great a weight.

Any suitable engine that will not occupy too much space can also be mounted upon the bed-plate C and used to drive the wheel, which, when constructed and arranged as above set

forth, may be so small as to be entirely below 30 the load-line of the boat.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with a vessel having a central longitudinal channel, of a wheel operating in said channel, a detachable cover for 35 the interior portion of said wheel, and an adjustable slide for covering the exterior portion thereof, substantially as set forth.

2. The combination, with the vessel A, having the central longitudinal channel, B, of the 40 bed-plate C, formed with aperture  $f$ , groove  $g'$ , and slot  $g$ , of the sliding shield G, adapted to register with said aperture, and the slots  $g'$  to close the channel at that point, substantially 45 as described.

3. The combination, with the vessel A, having a central longitudinal channel, B, provided with the slots  $g'$ , of the bed-plate C, having aperture  $f$ , the sliding shield G, a suitable wheel, 50 E, and a removable hood or cover therefor, substantially as described.

In testimony whereof I hereto affix my signature in presence of two witnesses.

PATRICK O'CONNOR.

Witnesses:

R. T. SEMMES,

FRED S. WILLSON.