

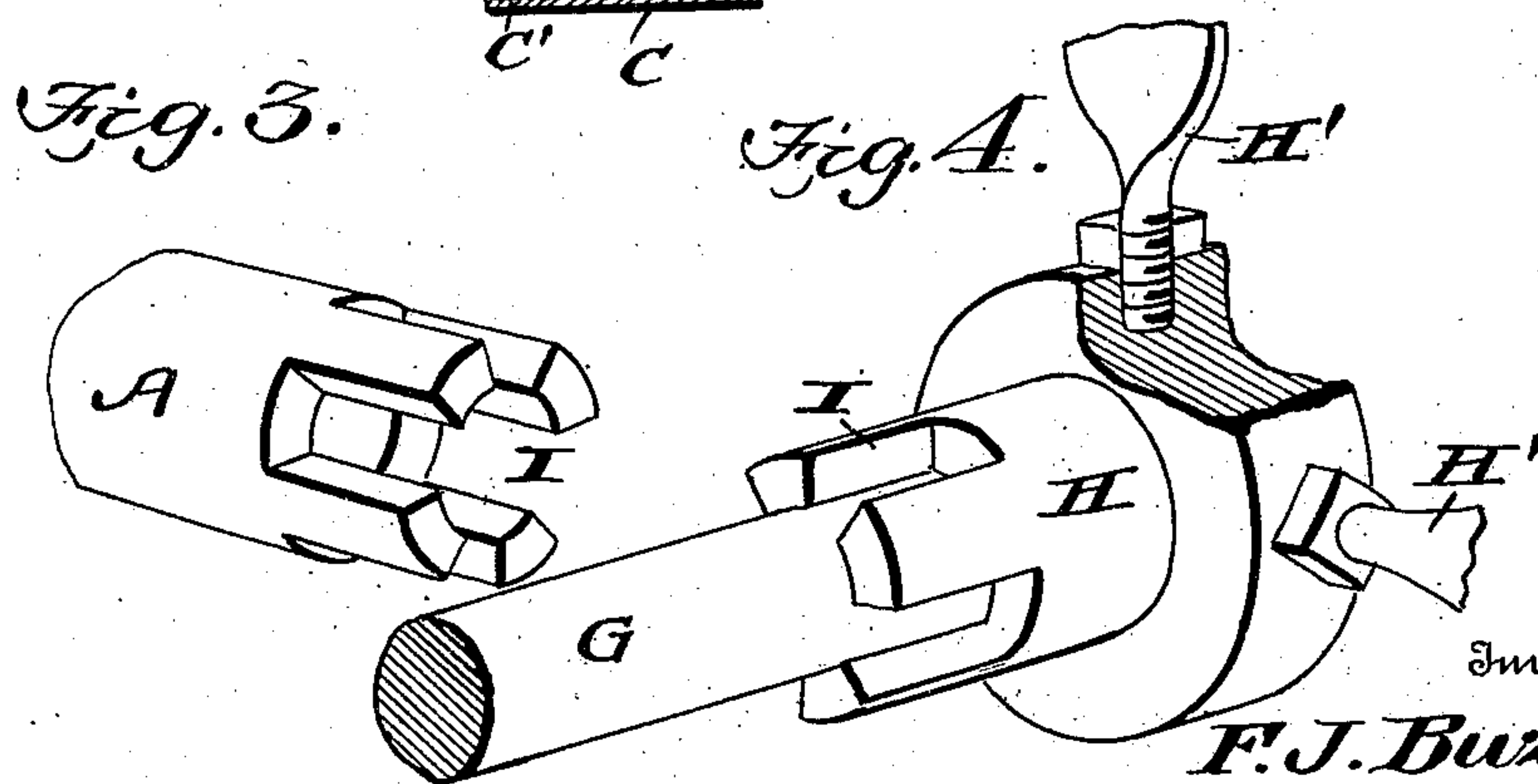
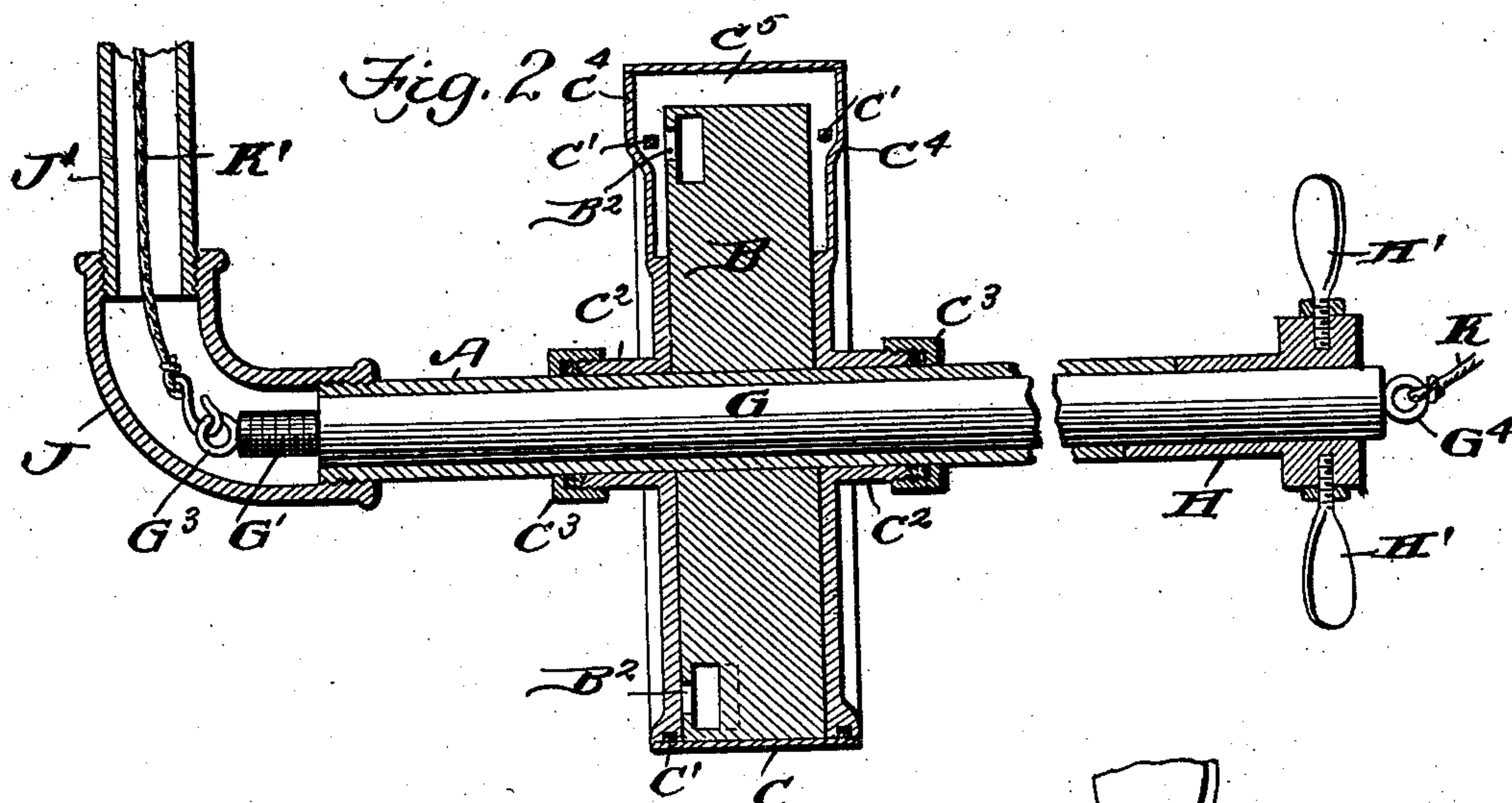
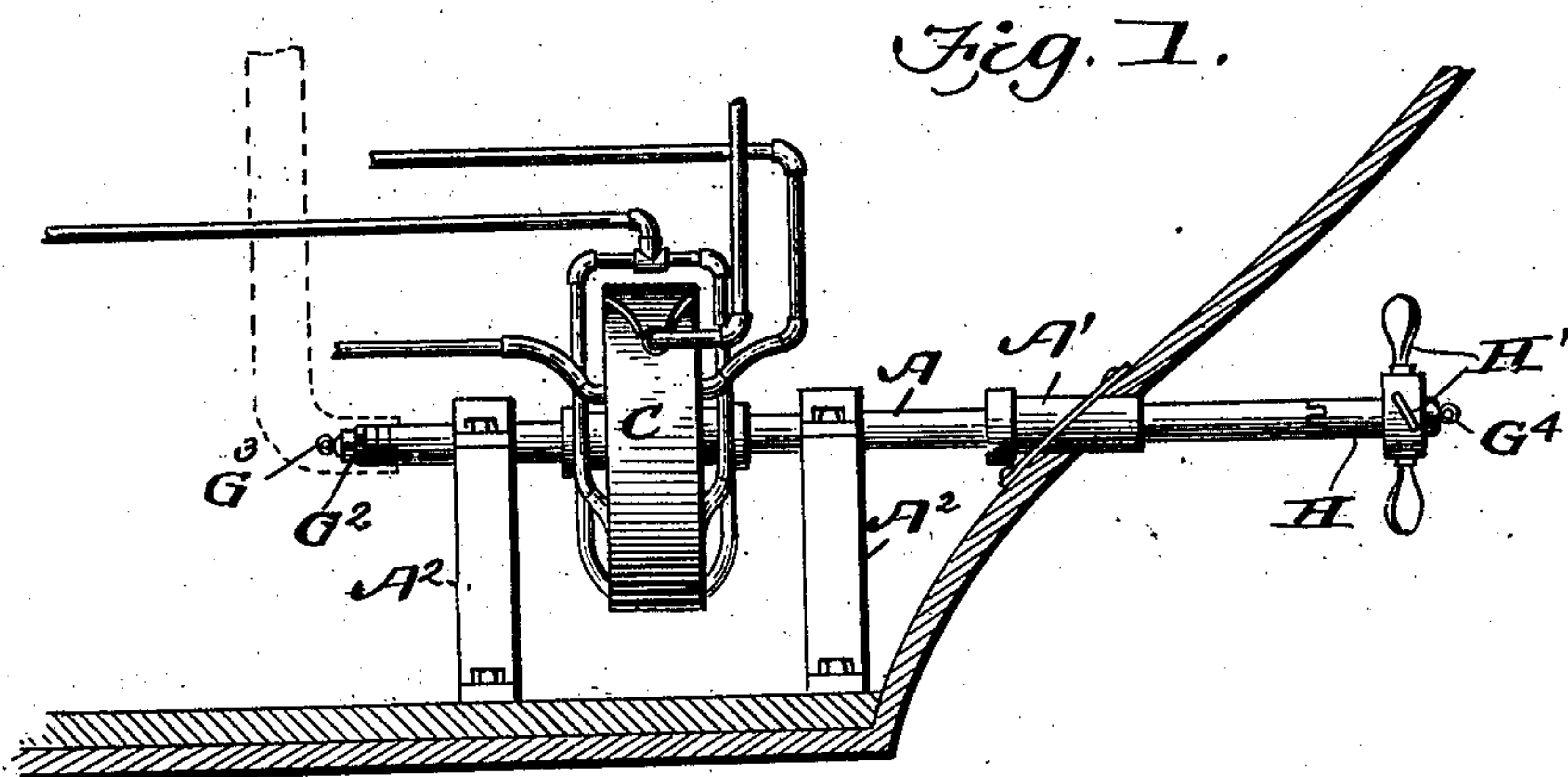
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PATENTED JUNE 21, 1904.

F. J. BUZBEE.
BOAT PROPELLER.

APPLICATION FILED JUNE 20, 1903.

NO MODEL.



Inventor

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UNITED STATES PATENT OFFICE.

FRANK JACKSON BUZBEE, OF CENTURY, FLORIDA.

BOAT-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 762,984, dated June 21, 1904.

Application filed June 20, 1903. Serial No. 162,385. (No model.)

To all whom it may concern:

Be it known that I, FRANK JACKSON BUZBEE, a citizen of the United States, residing at Century, in the county of Escambia and State of Florida, have invented a new and useful Boat-Propeller, of which the following is a specification.

My invention is an improvement in means for journaling boat-propellers and for driving same, my object being to devise a simple light type of steam-turbine rigidly connected to a hollow shaft through which runs the shaft of the propeller, whereby the propeller and the shaft to which the propeller is rigidly connected may be detached for repairs from the turbine-shaft, the two shafts rotating together when in use, this construction permitting the propeller to be detached without docking the boat, as will be hereinafter explained.

My invention consists of the novel features of construction and combination of parts hereinafter described, particularly pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my turbine and propeller shaft, the boat being in section. Fig. 2 is a vertical section through my turbine, the propeller-shaft being in elevation and showing means for detaching the propeller. Fig. 3 is an outline perspective view of the outer end of the turbine-shaft. Fig. 4 is a detail perspective view showing the outer end of the propeller-shaft, a part being broken away and shown in section.

In the construction of an apparatus embodying my improvement I employ a hollow shaft A, which passes through the stern of the vessel through a suitable stuffing-box A', the inner portion of the shaft being journaled on uprights A². A comparatively solid wheel B, as distinguished from a spoked wheel, is rigidly secured to the shaft A and is driving-wheel, piston, and engine combined. The wheel B rotates within a cylindrical casing C, which it snugly fits, the sides of the casing covering the apertures B², as shown in Fig. 2, packing-rings C' being employed between the sides and periphery of the casing, which, it will be understood, is stationary.

Where the shaft A passes through, the casing is flanged, as at C², and flanged collars C³ are threaded on the flanges C². The upper portion of the casing is extended slightly above the wheel, the sides of the casing being extended outwardly, as at C⁴, whereby a hood C⁵ is formed.

It will be understood that suitable means is provided for admitting steam to and driving the turbine-wheel B within its casing. Inasmuch as the specific construction of steam-turbine used with my form of propeller-shaft is immaterial, the wheel is not described in detail, and that a rotary engine or turbine of any make or design may be employed in connection with the hollow shaft A.

A propeller-shaft G passes loosely through the shaft A and has a projecting threaded reduced inner end G', over which fit suitable jam-nuts G², and a ring G³ is secured to the end of this reduced portion.

On the outer end of the shaft G is rigidly secured a shaft H, having at its outer end a cylindrical enlargement in which the propeller-blades H' are secured. The shafts A and H have their adjacent ends dovetailed, as shown at I, the dovetailed portions interlocking and securing the two shafts A and H together, and it will be remembered that the shaft H is fast on the shaft G.

When the nuts G² are removed, the shaft G can be withdrawn from the shaft A by securing a cable to a ring G⁴ in the outer end of the propeller-shaft. To prevent water from running into the boat through the shaft A when the shaft G has been withdrawn, an elbow J is threaded to the inner end of the shaft A, a cable being first attached to the ring G³ and carried through the elbow and a pipe J' secured in the elbow and extending upward above the water-line. After the shaft G has been drawn out by the cable K and the propeller cleaned or repaired it can be drawn back by the cable K' and again locked in position by the jam-nuts G², of course after the pipes J J' have been removed.

Owing to the small space occupied by this engine and the ease with which the propeller can be taken off and replaced, the apparatus

described is especially adapted for use in tug-boats, though adapted for use with any class of mechanically-propelled boats.

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

1. A device of the kind described, comprising a hollow rotatable shaft dovetailed at the outer end, a propeller-shaft extending through
10 and projecting from each end of the hollow shaft, a hollow shaft dovetailed at its inner end and fitting over the outer portion of the propeller-shaft and rigidly secured thereto, propeller-blades carried by the last-mentioned
15 hollow shaft, and a turbine-wheel rigidly secured to the first-mentioned hollow shaft.

2. The combination with a stationary casing, of a hollow rotary shaft passing there-through, a steam turbine-wheel rigidly secured on said hollow shaft, a propeller-shaft
20 loosely passing through the hollow shaft and carrying propeller-blades at its outer end, and means for detachably locking the propeller-shaft to the hollow rotary shaft.

25 3. An apparatus of the kind described comprising a hollow rotary shaft passing through

the stern of a vessel, a propeller-shaft passing loosely through the hollow shaft, means for locking the shafts together, an upwardly-extending pipe-section adapted to fit over the
30 inner end of the hollow shaft, and cables secured to each end of the propeller-shaft, the inner cable extending through the pipe-section.

4. The combination with a turbine cast on
35 a hollow shaft, said shaft extending through the stern of a boat, and being dovetailed at its outer end, of a propeller-shaft arranged loosely in the hollow shaft, and extending outwardly beyond the same, the said propeller-
40 shaft having an enlarged outer end portion having an exterior diameter equal to the exterior diameter of the first-mentioned hollow shaft, and being dovetailed to fit the dove-
45 tailed portion of said hollow shaft, and propeller-blades rigidly secured to the outer end of the propeller-shaft.

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