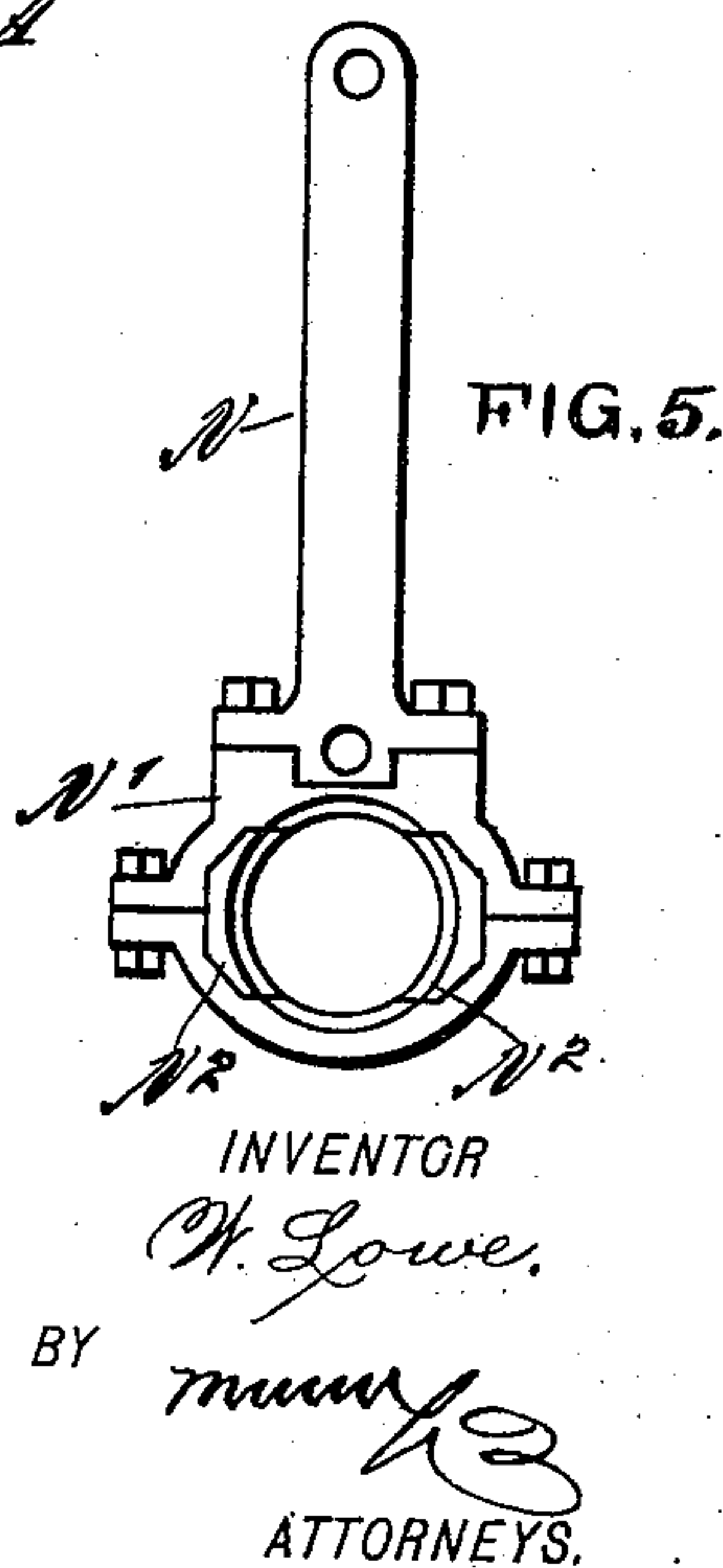
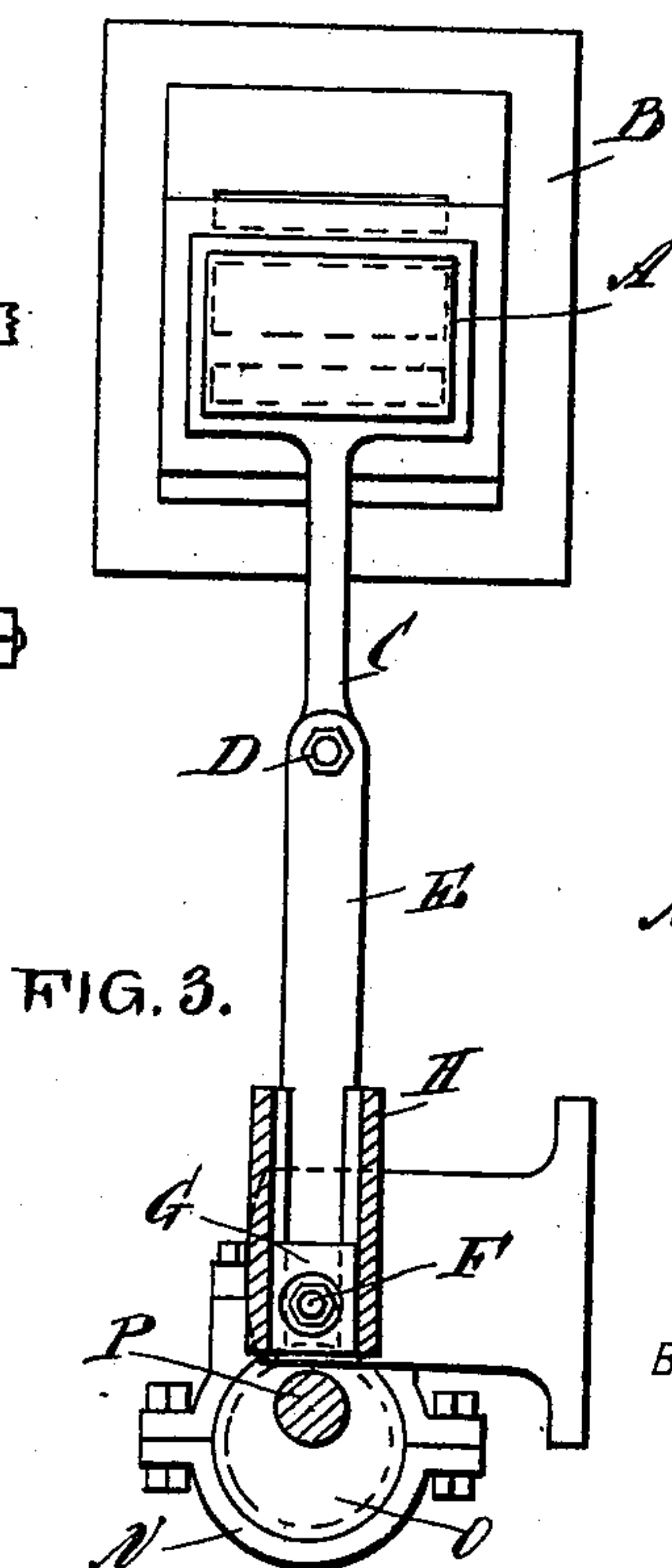
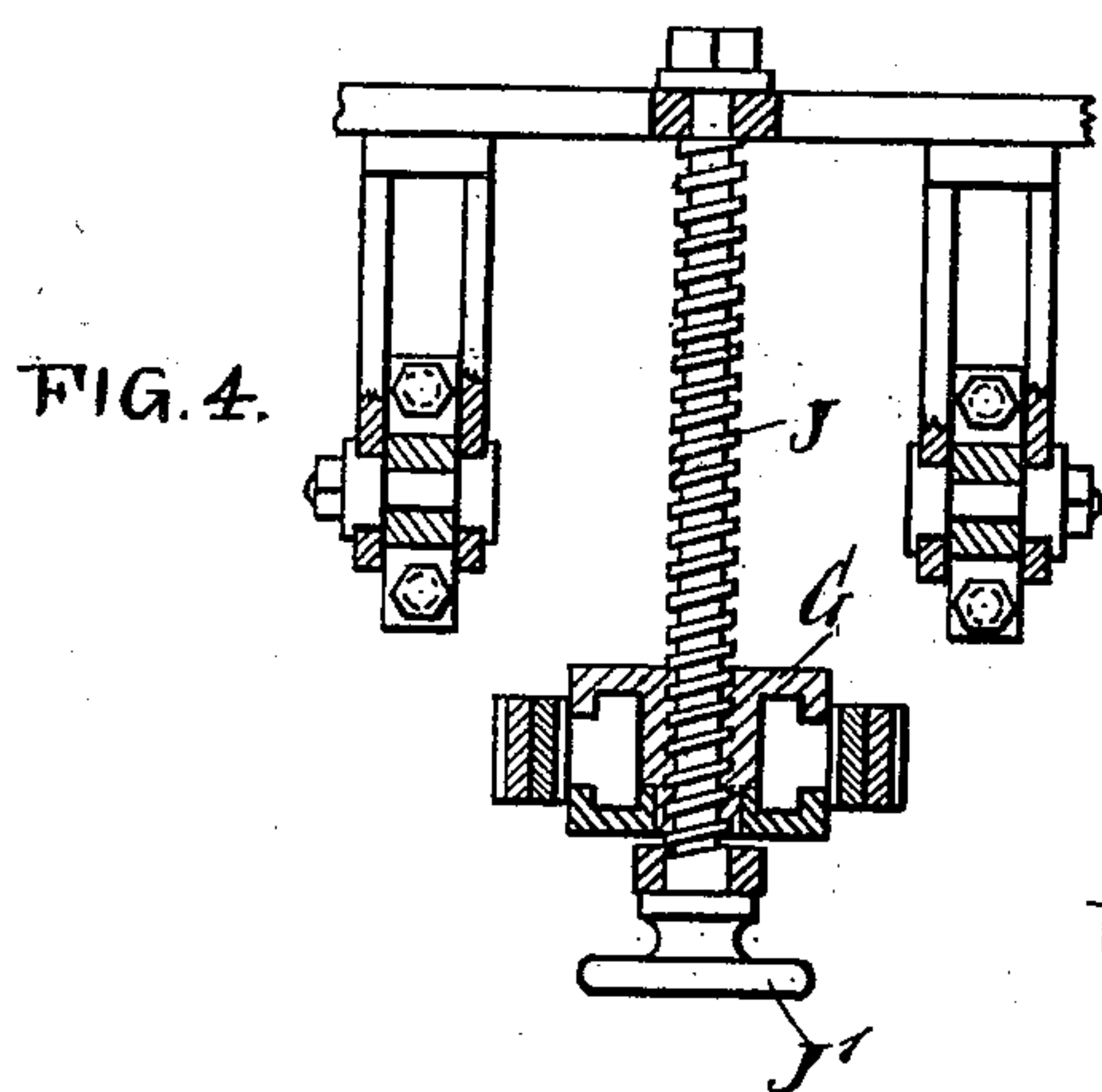
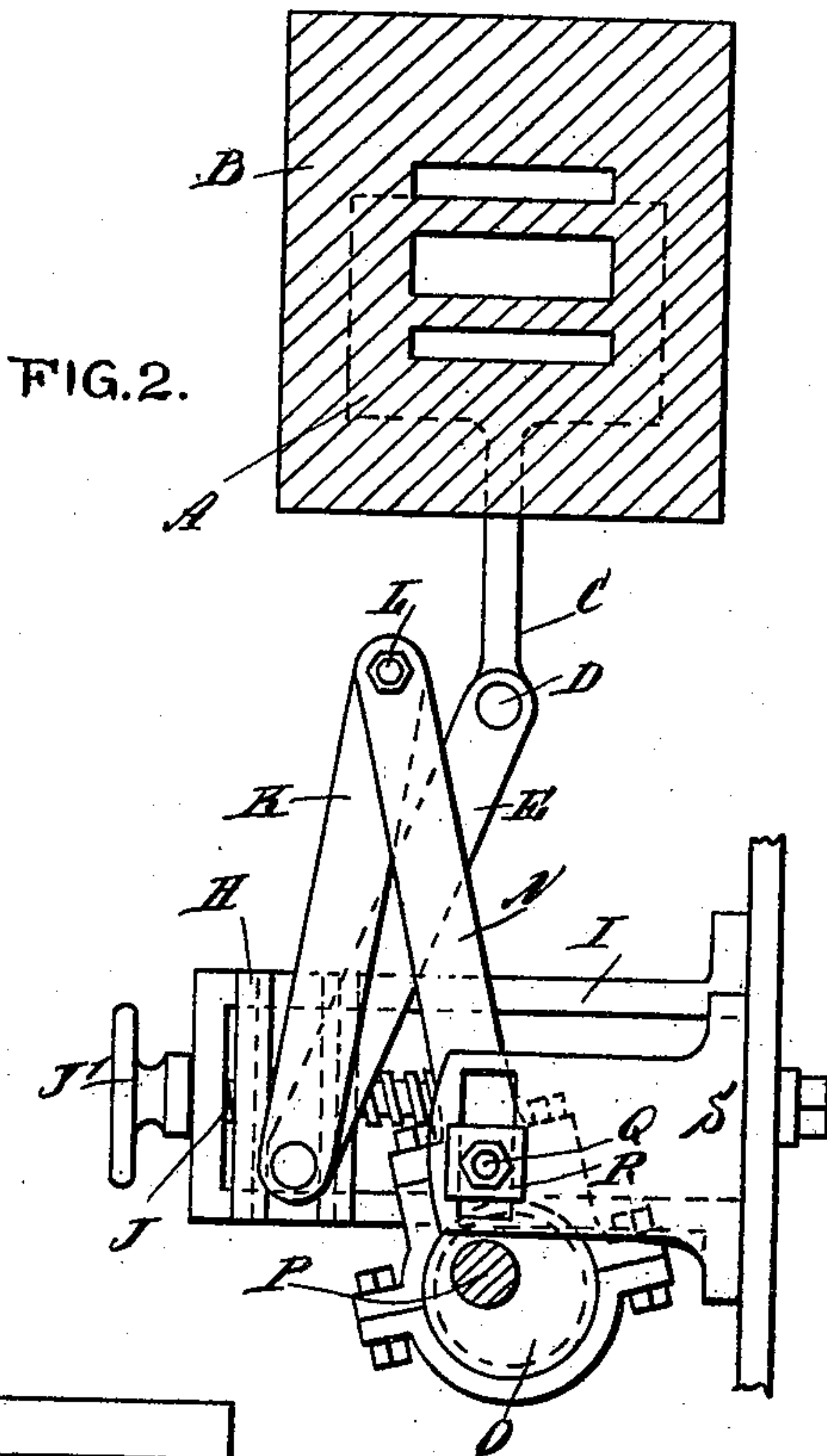
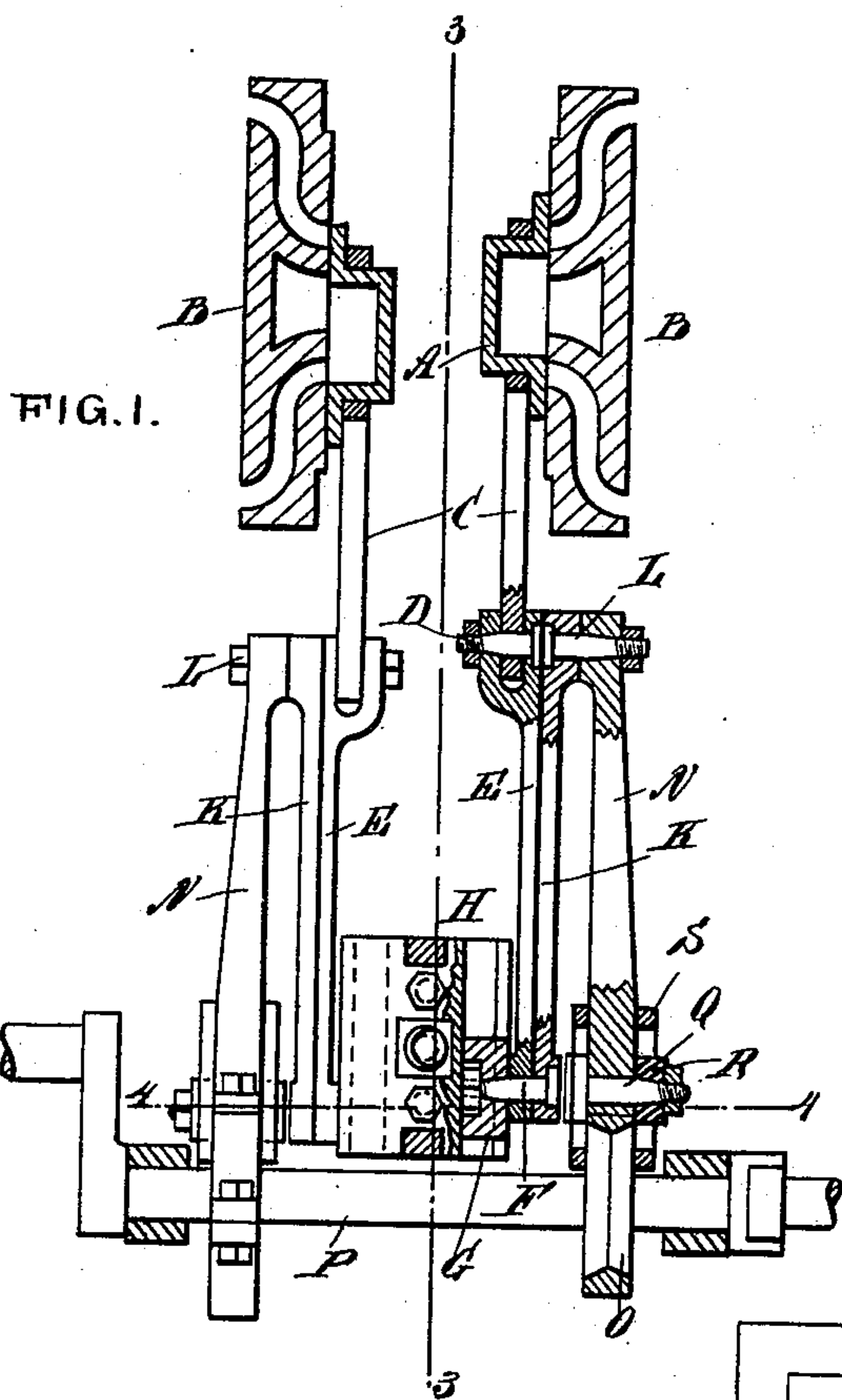


(No Model.)

W. LOWE.
VALVE GEAR.

No. 602,343.

Patented Apr. 12, 1898.



WITNESSES:

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WILLIAM LOWE, OF SYDNEY, NEW SOUTH WALES.

VALVE-GEAR.

SPECIFICATION forming part of Letters Patent No. 602,343, dated April 12, 1898.

Application filed August 7, 1897. Serial No. 647,449. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LOWE, of Paddington, Sydney, New South Wales, Australia, have invented a new and Improved Valve-Gear, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved valve-gear which is simple and durable in construction, very effective in operation, and more especially designed for transmitting motion to the valves of reversing steam-engines and other engines and machines.

The invention consists particularly of a link for connection with the valve-stem and pivotally connected with a slidable reversing-block and a second link pivotally connected with the said block and with a rod having a forward-and-backward and swinging motion.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional front elevation of the improvement as applied to a pair of marine engines. Fig. 2 is a side elevation of the same with part in section. Fig. 3 is a sectional side elevation of the same on the line 3 3 of Fig. 1. Fig. 4 is a sectional plan view of the improvement on the line 4 4 of Fig. 1, and Fig. 5 is a side elevation of the eccentric-strap.

The improved valve-gear, as illustrated in Fig. 1, is applied to a pair of marine engines, each having the usual slide-valve A operating over the ports in the cylinders B. Each slide-valve A is provided with the usual valve-stem C, pivotally connected at its outer end with a pin D, held in the forked end of a link E, pivotally connected at its lower end with a pin F, secured in a block G, held to slide vertically in a guideway H, fitted to slide in a bearing I, attached to the bed-plate of the engine or other suitable stationary part. The guideway H is engaged by a screw J, having a hand-wheel J', mounted to turn in the bearing I, so as to move the guideway H to either side of the main driving-shaft, according to the direction in which the engine is to run, or to

move the said guideway into an intermediate or middle position when the engine is at rest. On the pin F, previously mentioned, is fulcrumed the link K, extending parallel to the link E and pivotally connected at its upper end by a pin L with the free end of a rod N of an eccentric O, secured on the main driving-shaft P. The rod N is provided near its strap with a pin Q, engaging a block R, fitted to slide vertically in a guideway S, secured to the bed-plate or other fixed part of the engine, the guideways H and S standing parallel one to the other and the guideway S extending in a plane passing through the shaft B and the valve-stem C. (See Fig. 2.) The eccentric-strap N' of the eccentric-rod N is preferably provided with movable side pieces N² for taking up wear to insure the proper working of the eccentric.

The operation is as follows: When the guideway H is at one side of the shaft P, as shown in Fig. 2, and the engine is running, the eccentric O then imparts an upward-and-downward motion to the rod N, which also swings laterally, owing to the pivot-pin Q in the sliding block R. This motion of the rod N causes the link K to impart an up-and-down sliding motion to the block G, which in turn imparts motion to the link E and valve-stem C to shift the valve A over the cylinder-ports. Now by adjusting the guideway H in the bearing I any desired amount of opening of ports can be given to the valve A, and when it is desired to reverse the engine the operator turns the handle J' to cause the screw-rod J to move the guideway H to the other side of the shaft P, so that the motion of the engines is reversed by the parts above referred to, as will be readily understood by reference to Fig. 2.

It will be seen that this device is very simple and durable in construction and can be easily manipulated by the engineer, and it is evident that instead of using the eccentric O and its eccentric-rod N any other device having an upward-and-downward and swinging motion can be used to impart the necessary motion to the link K, as previously mentioned. Thus the connecting-rod of the engine may be used for the same purpose, or the coupling-rod of a locomotive-engine.

Having thus fully described my invention,

I claim as new and desire to secure by Letters Patent—

1. A valve-gear, comprising a link for connection with the valve-stem, a slidable block 5 pivotally connected with the said link, an adjustable guideway carrying the said block, a second link pivotally connected with the said block, and a rod pivotally connected with the said second link and having a forward- 10 and-backward and swinging motion, substantially as shown and described.

2. A valve-gear, comprising a link for connection with the valve-stem, a slidable block pivotally connected with the said link, a guide- 15 way in which the said block moves, means for adjusting the said guideway for reversing purposes, a second link pivotally connected with the said block, and an eccentric-rod pivotally connected with the said second link 20 and mounted to swing on a slidable block, substantially as shown and described.

3. A valve-gear, comprising a link for con-

nection with the valve-stem, a slidable block pivotally connected with the said link, a second link pivotally connected with the said 25 block, an eccentric-rod pivotally connected with the said second link, and a second slidable block pivotally connected with the said eccentric-rod and moving parallel to the first-named slidable block, substantially as shown 30 and described.

4. A valve-gear provided with an adjustable guideway, a block fitted to slide thereon and connected with the valve, a second block 35 mounted to slide parallel with the first-named block, an eccentric-rod pivoted on the said second block, and a connection between the said eccentric-rod and the first-named block, substantially as shown and described.

WILLIAM LOWE.

Witnesses:

J. A. CONGDON,

WILLIAM HENRY DAWSON.