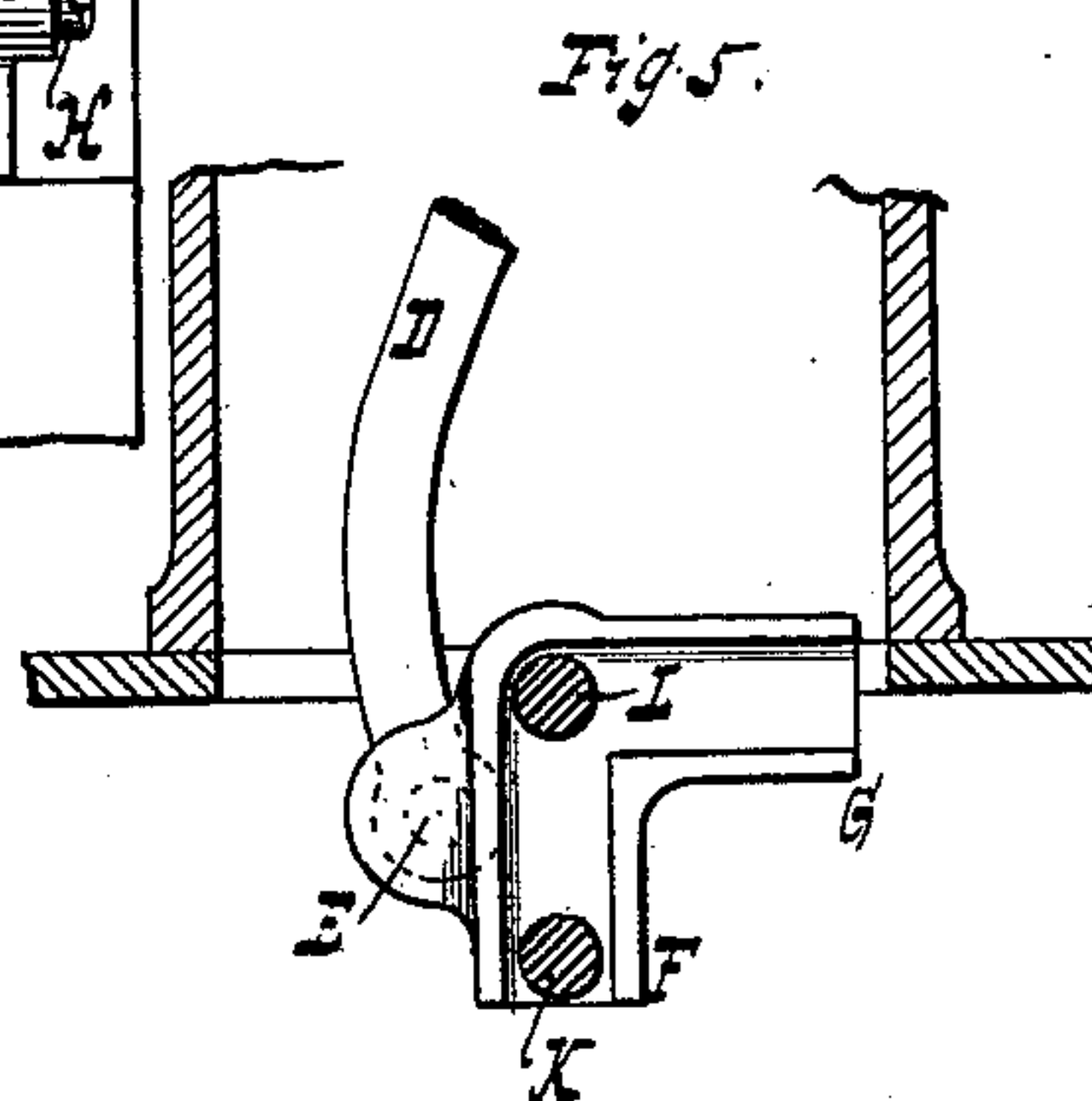
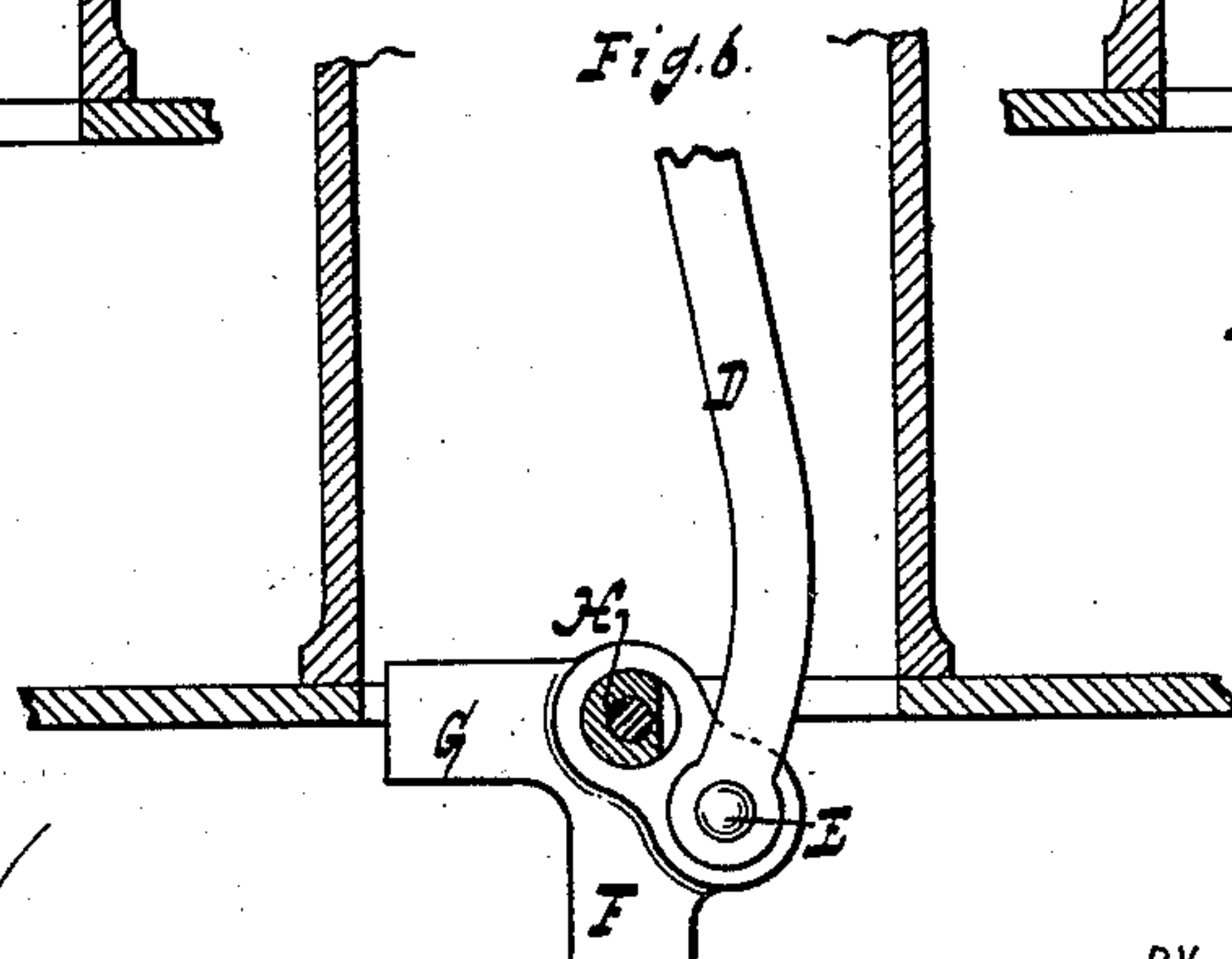
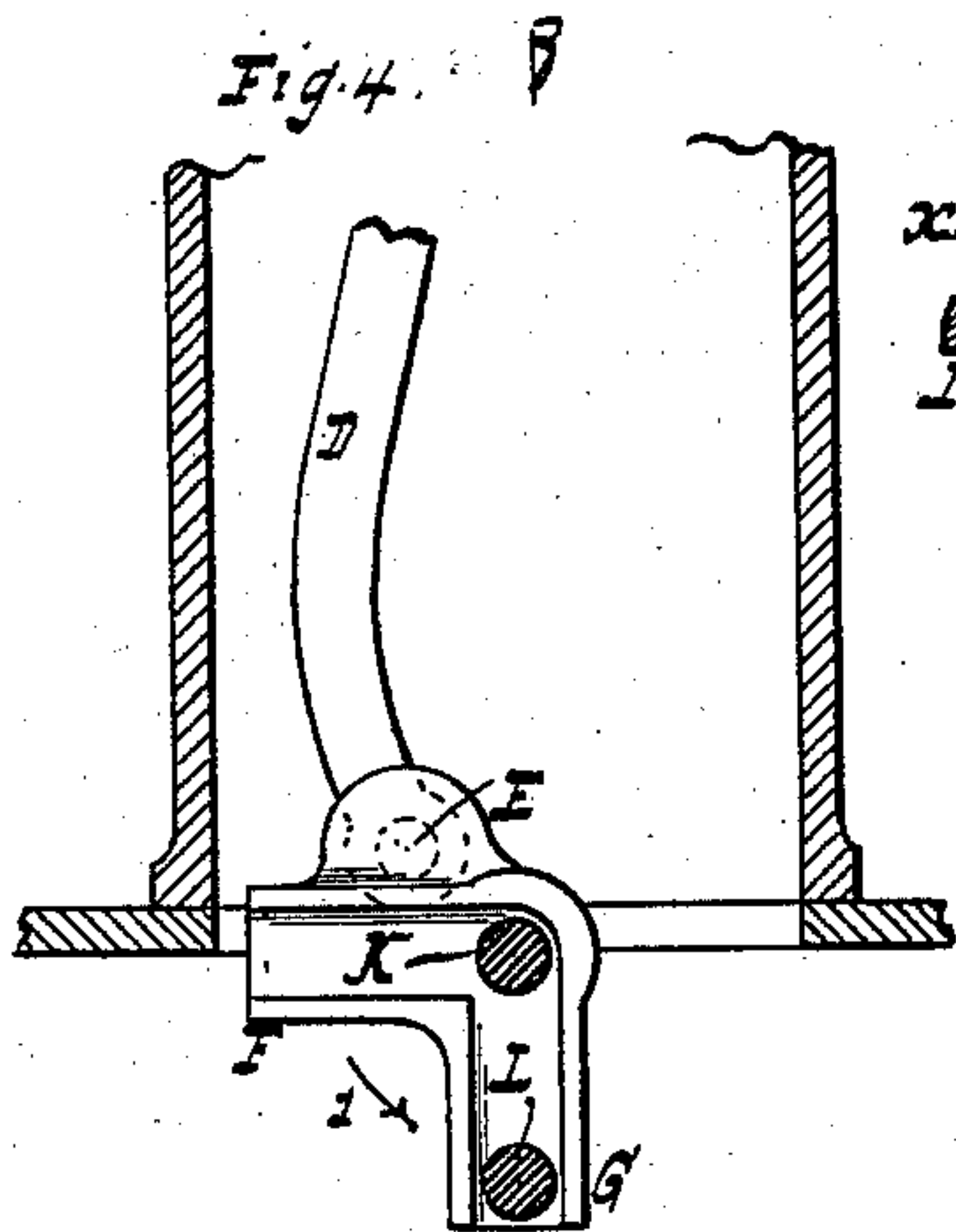
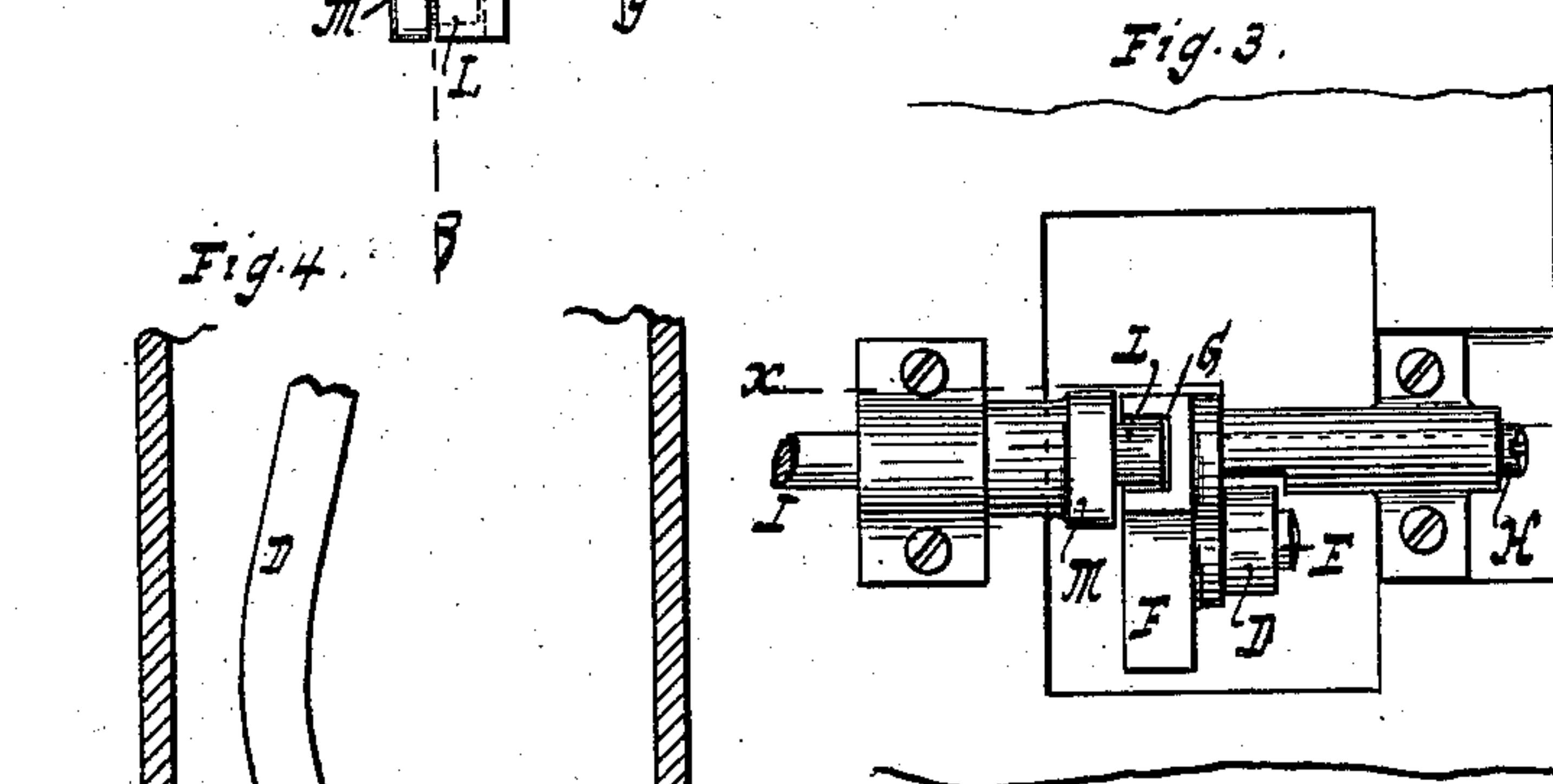
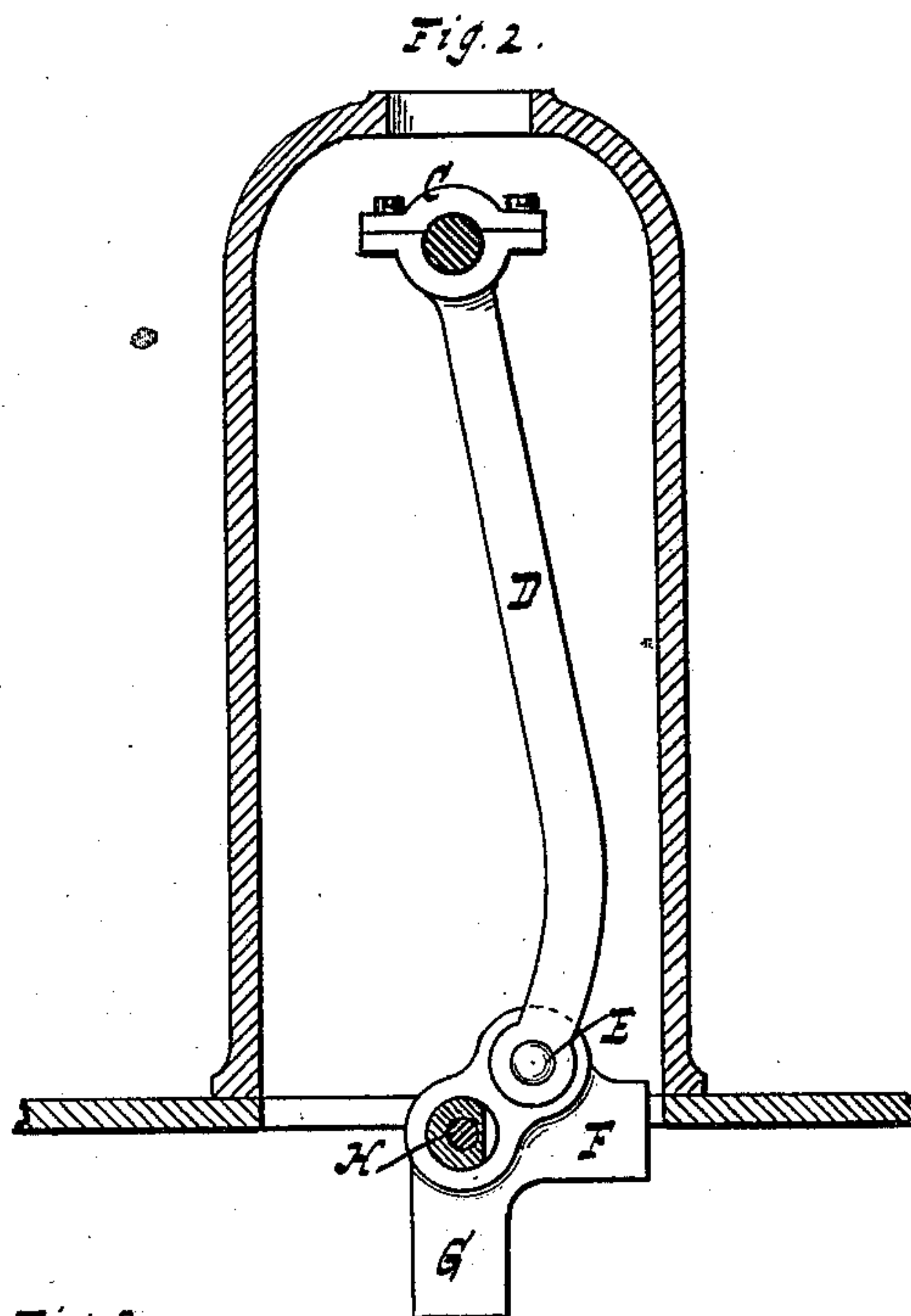
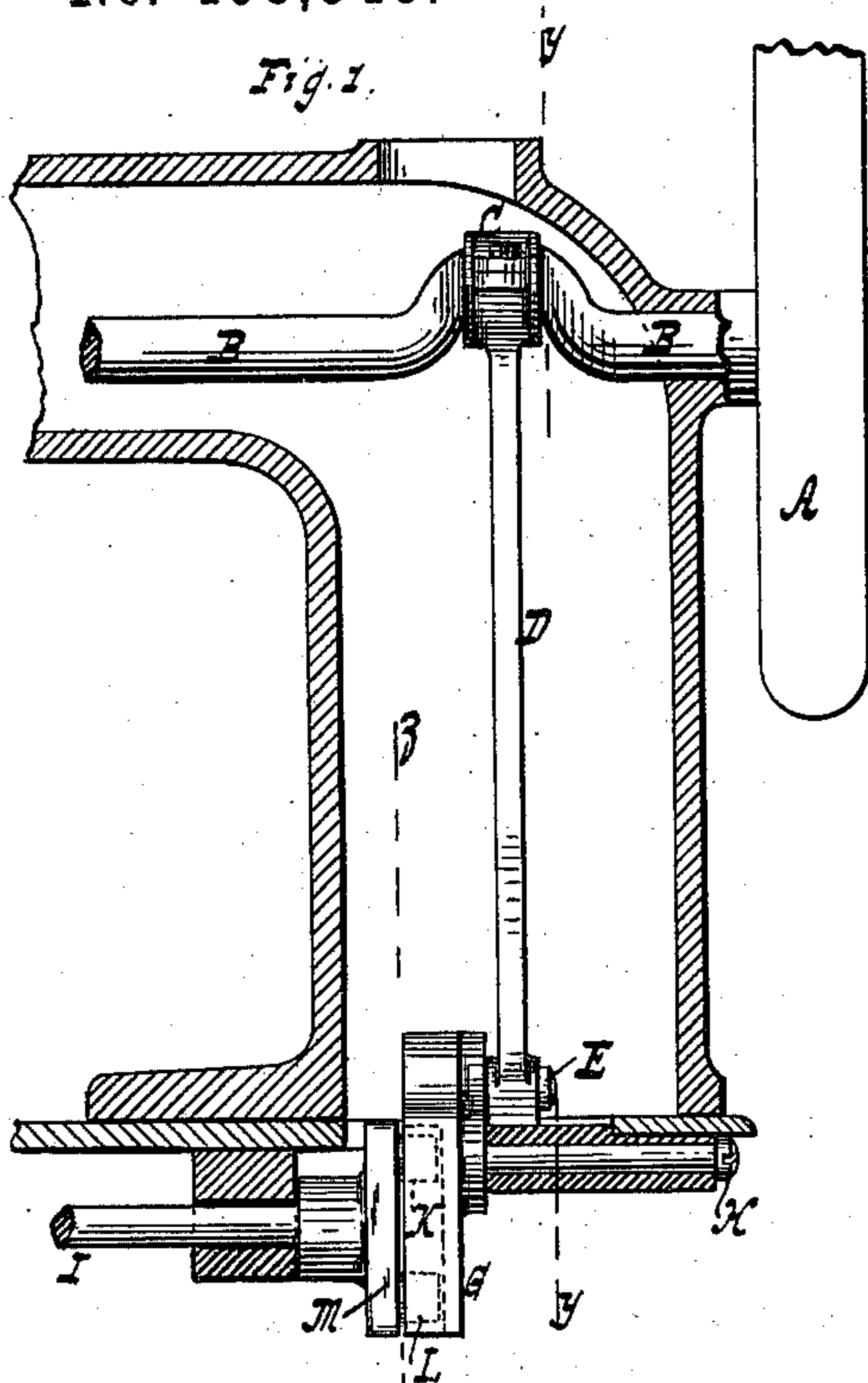


(No Model.)

J. P. STILES.  
MECHANICAL MOVEMENT.

No. 408,546.

Patented Aug. 6, 1889.



WITNESSES:

William Miller  
Edward Wolff.

INVENTOR:

James P. Stiles.

BY Van Santvoord & Hauck

ATTORNEY

# UNITED STATES PATENT OFFICE.

JAMES P. STILES, OF NEW YORK, N. Y.

## MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 408,546, dated August 6, 1889.

Application filed December 13, 1888. Serial No. 293,450. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES P. STILES, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Mechanical Movements, of which the following is a specification.

The object of this invention is to secure an easy actuation of a rock-shaft, and this object is accomplished by means of an angular stud-and-groove connection, as set forth in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a mechanical movement and surrounding parts partly broken away and partly in section along the line  $xx$ , Fig. 3. Fig. 2 is a section along the line  $yy$ , Fig. 1. Fig. 3 is an inverted plan view of Fig. 1. Fig. 4 is a section along the line  $zz$ , Fig. 1. Fig. 5 is a view similar to Fig. 4, with parts in a different position than in Fig. 4. Fig. 6 is a view similar to Fig. 2, with parts in a different position than in Fig. 2.

Similar letters indicate corresponding parts.

In the drawings, the letter A indicates a fly-wheel having a rotary shaft B, with a crank or eccentric C, imparting an oscillating motion to the pitman or rod D. Said rod D is pivoted or jointed at E to a bracket consisting of two arms F G, placed at an angle to one another. Said bracket oscillates about a pivot or support H. The arms F G are grooved.

The rock-shaft I has studs K L entering the grooves of the arms F G. Said studs K L are secured to a plate or base M on the rock-shaft I.

The operation of the device is as follows: The oscillations of the rod D cause the bracket-arms F G to swing from the position shown in Figs. 2 and 4 to the position shown in Figs. 5 and 6, and back again to the position shown in Figs. 2 and 4, and so on. When the bracket-arms F G swing in the direction of arrow 1, Fig. 4, from the position shown in Fig. 4 to the position shown in Fig. 5, the

studs K L are oscillated so that the stud L rests above the stud K, and the shaft I is turned a certain distance. When the bracket-arms swing back in the direction opposed to arrow 1, so that said bracket-arms move from the position shown in Fig. 5 to the position shown in Fig. 4, the studs K L are carried back to the position shown in Fig. 4, with the stud K resting above the stud L, and the shaft I is rocked or swung back to its first position.

Of course, instead of having the studs K L on the shaft I and the grooves on the bracket, the studs K L might be on the bracket and the grooves on the shaft I.

The rock-shaft I can be used to actuate any suitable piece of mechanism—as, for example, a shuttle of a sewing-machine, or any other suitable piece of mechanism.

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

1. The combination, with an oscillating bracket and an oscillating actuating rod or connection for actuating said bracket, of a rock-shaft, and an angular stud-and-groove connection between said bracket and rock-shaft, substantially as described.

2. The combination, with an oscillating bracket having grooves placed at an angle to one another, and an oscillating actuating rod or connection for actuating said bracket, of a rock-shaft having studs made to engage said grooves, substantially as described.

3. The combination, with a bracket consisting of two grooved arms placed at an angle to one another and supported on a pin or pivot, of an actuating rod or connection for oscillating said bracket, and a rock-shaft having studs made to engage the grooved arms, substantially as described.

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

JAMES P. STILES. [L. S.]

Witnesses:

W. C. HAUFF,  
E. F. KASTENHUBER.