

(No Model.)

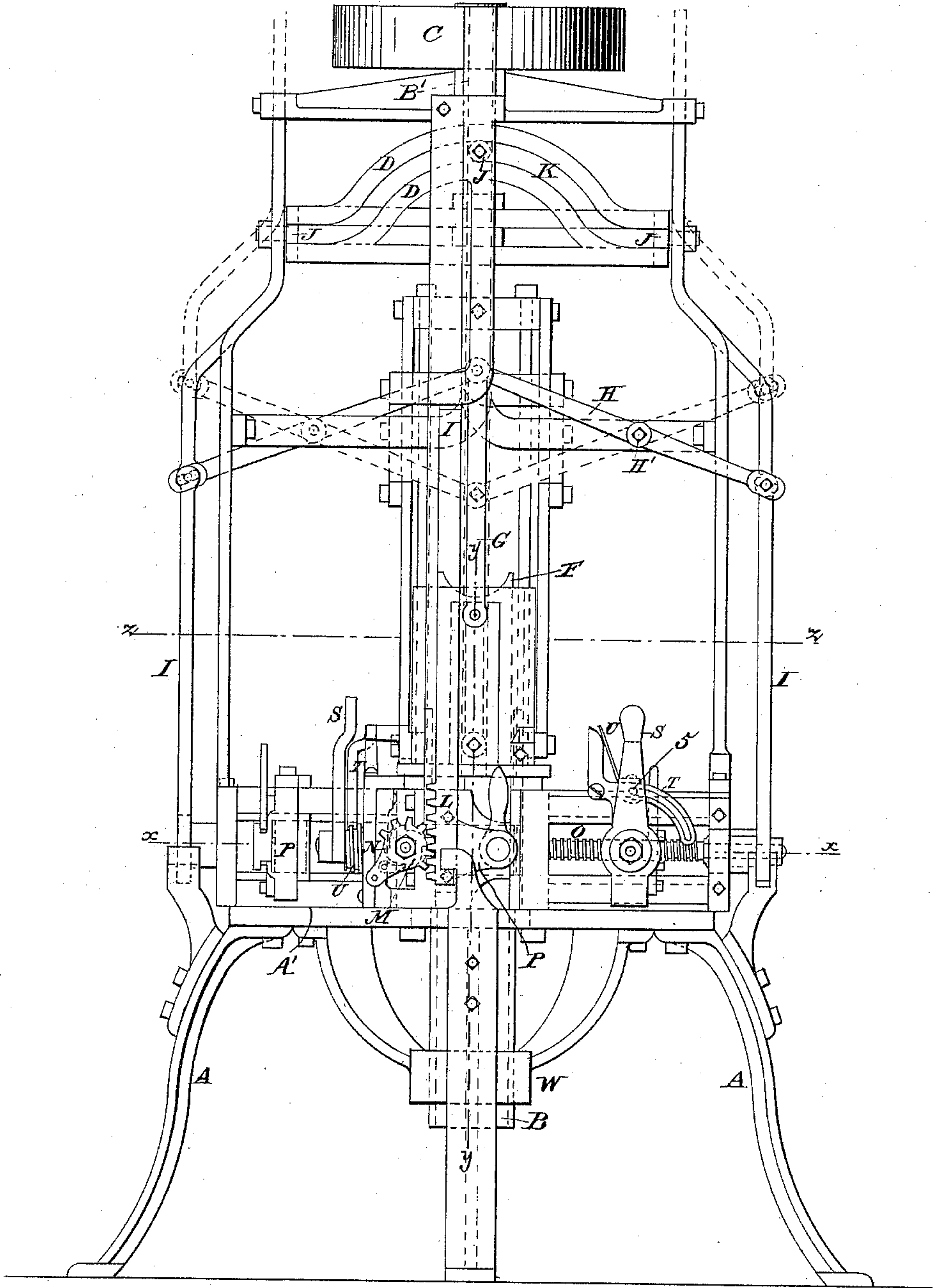
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D. H. BRENNER.  
MACHINE FOR CUTTING WOODEN DISHES.

No. 409,909.

Patented Aug. 27, 1889.

Fig. 1.



Witnesses:

J. C. Brecht  
Robert Everett.

Inventor:

David H. Brenner  
By Edward Tappan  
Attorney.

(No Model.)

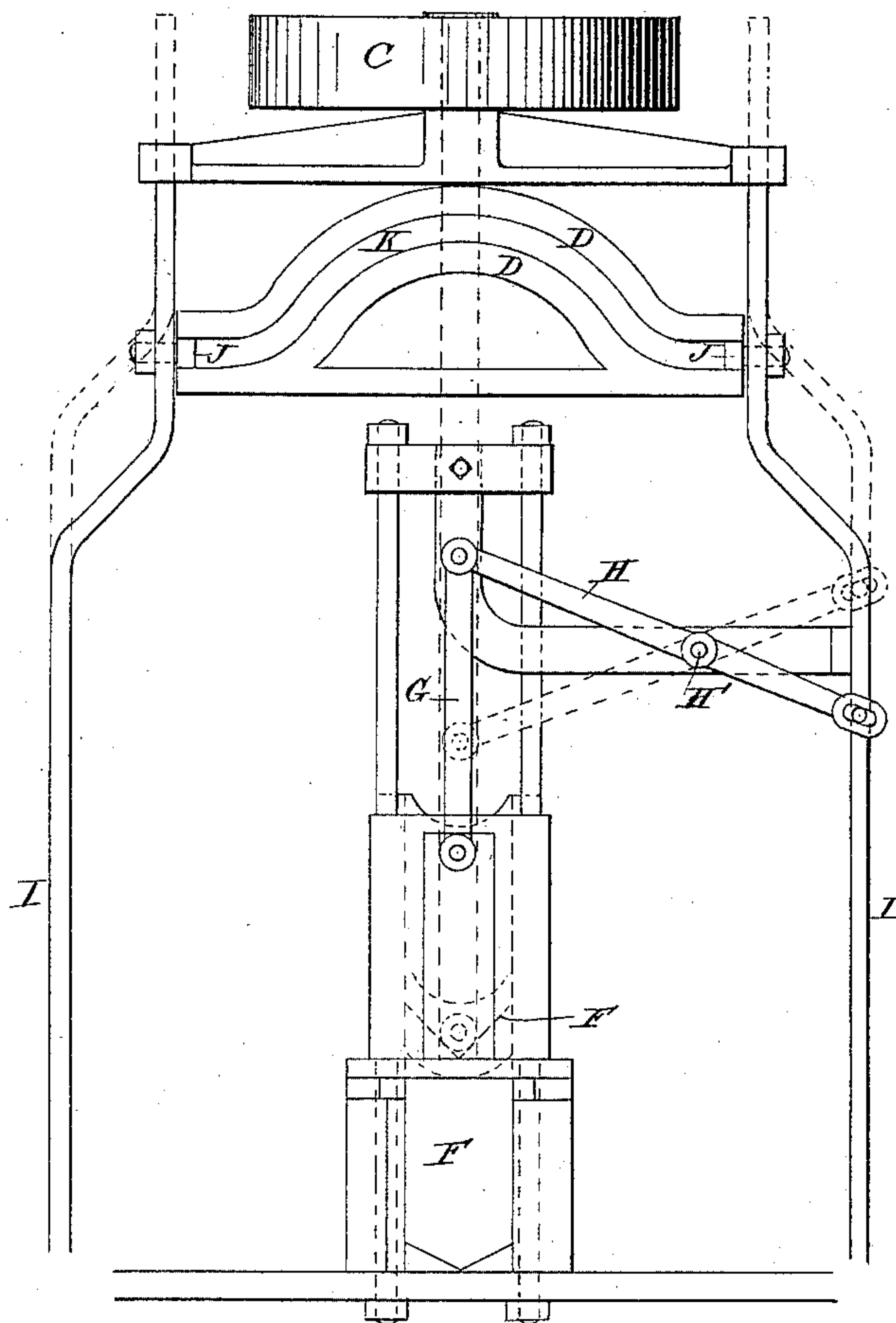
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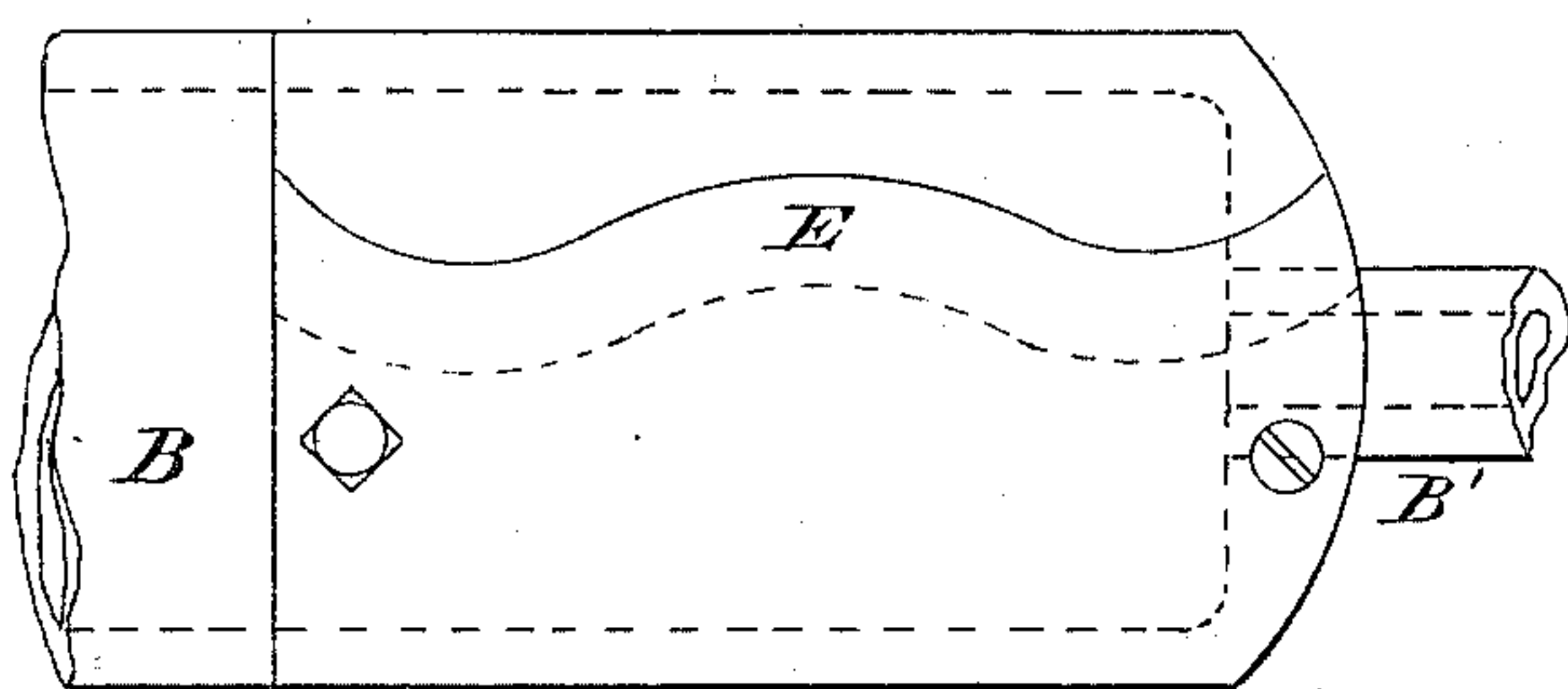
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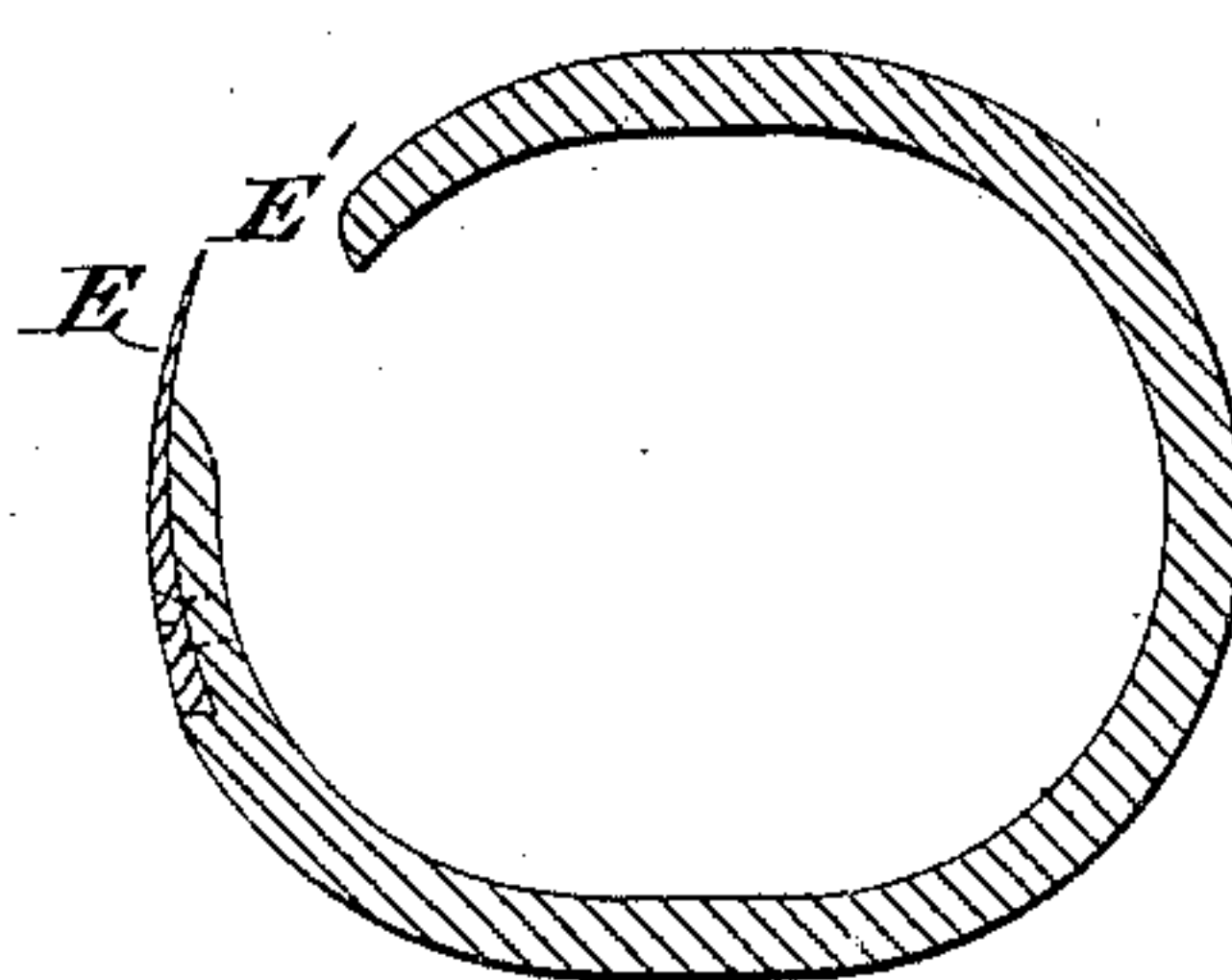
*Fig. 2.*



*Fig. 8.*



*Fig. 9.*



Witnesses:

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Albert G. Pratt

Inventor:

David H. Brenner  
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Attorney.

(No Model.)

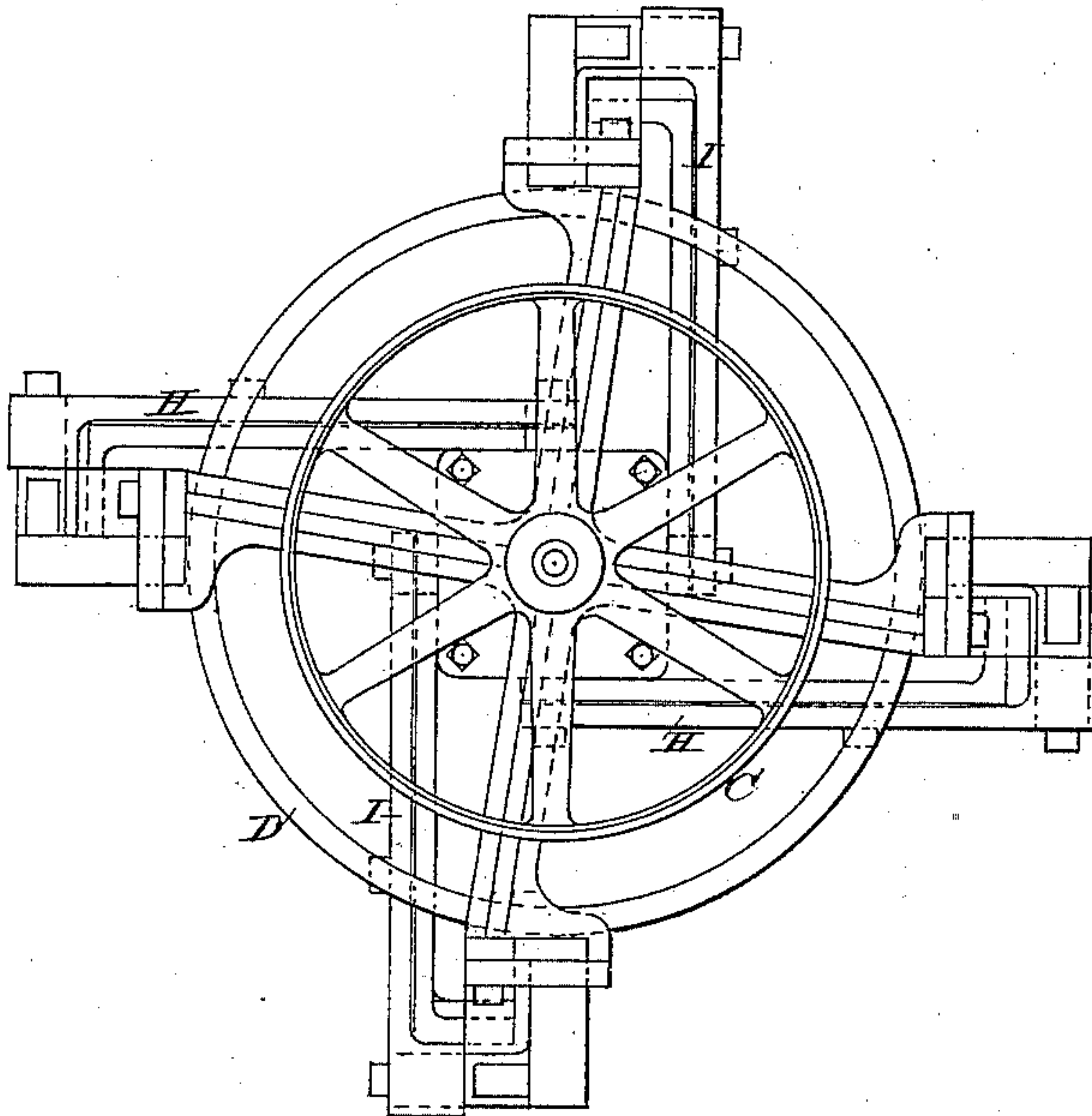
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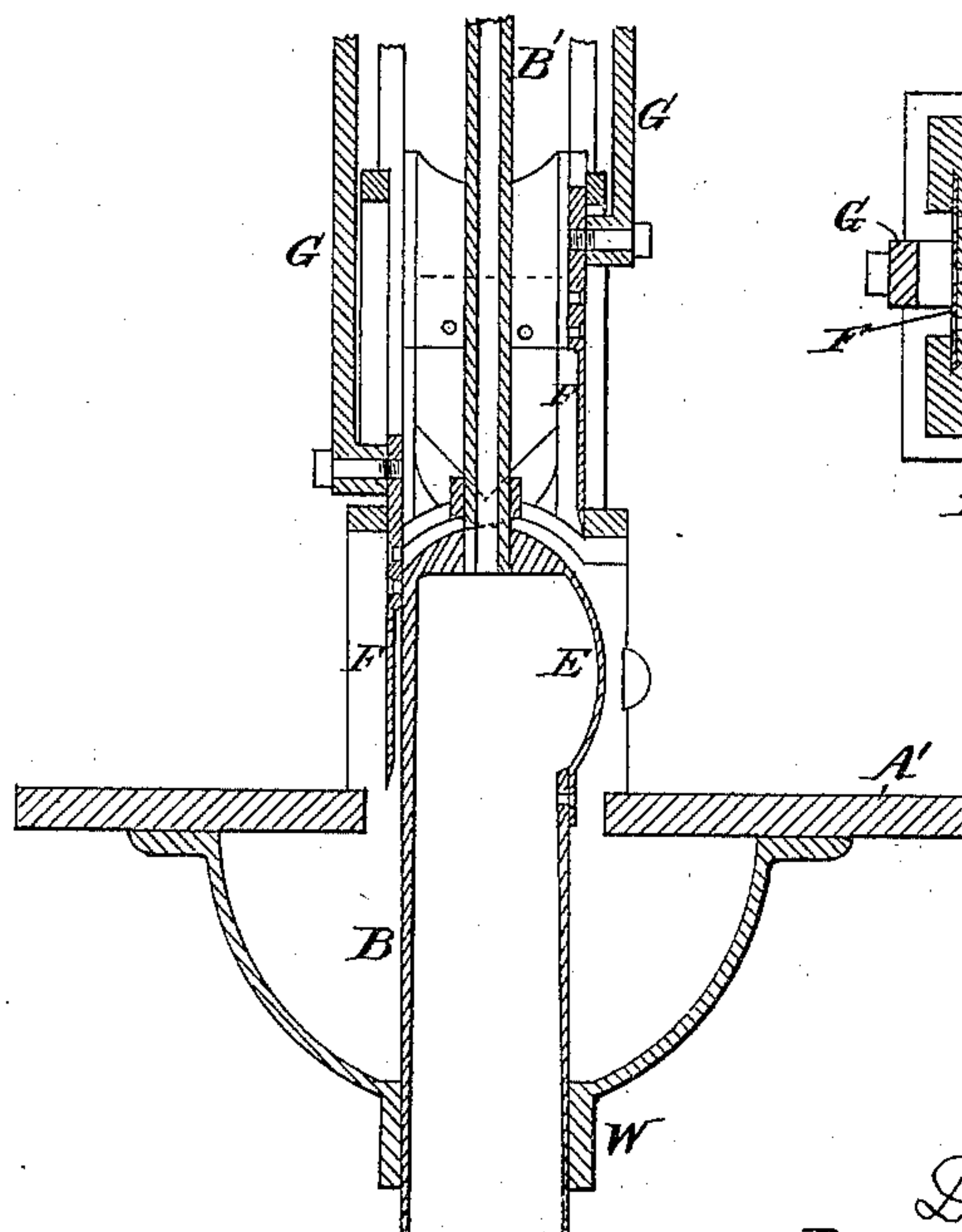
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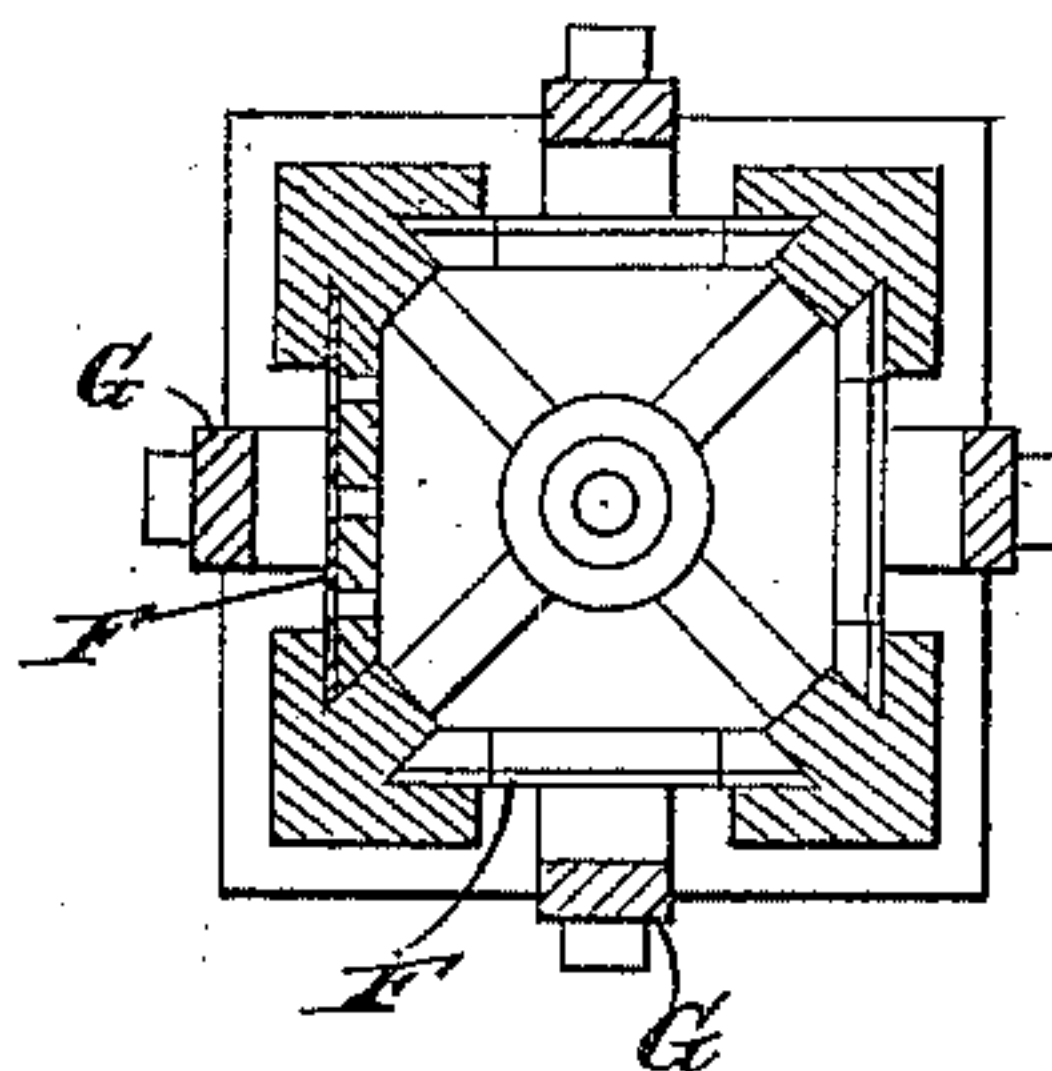
*Fig. 3.*



*Fig. 5.*



*Fig. 6.*



*Witnesses:*

*J. C. Brecht,*  
*Alfred Gruett.*

*Inventor:*

*David H. Brenner*  
*By Edward Taggart*  
*Attorney.*



(No Model.)

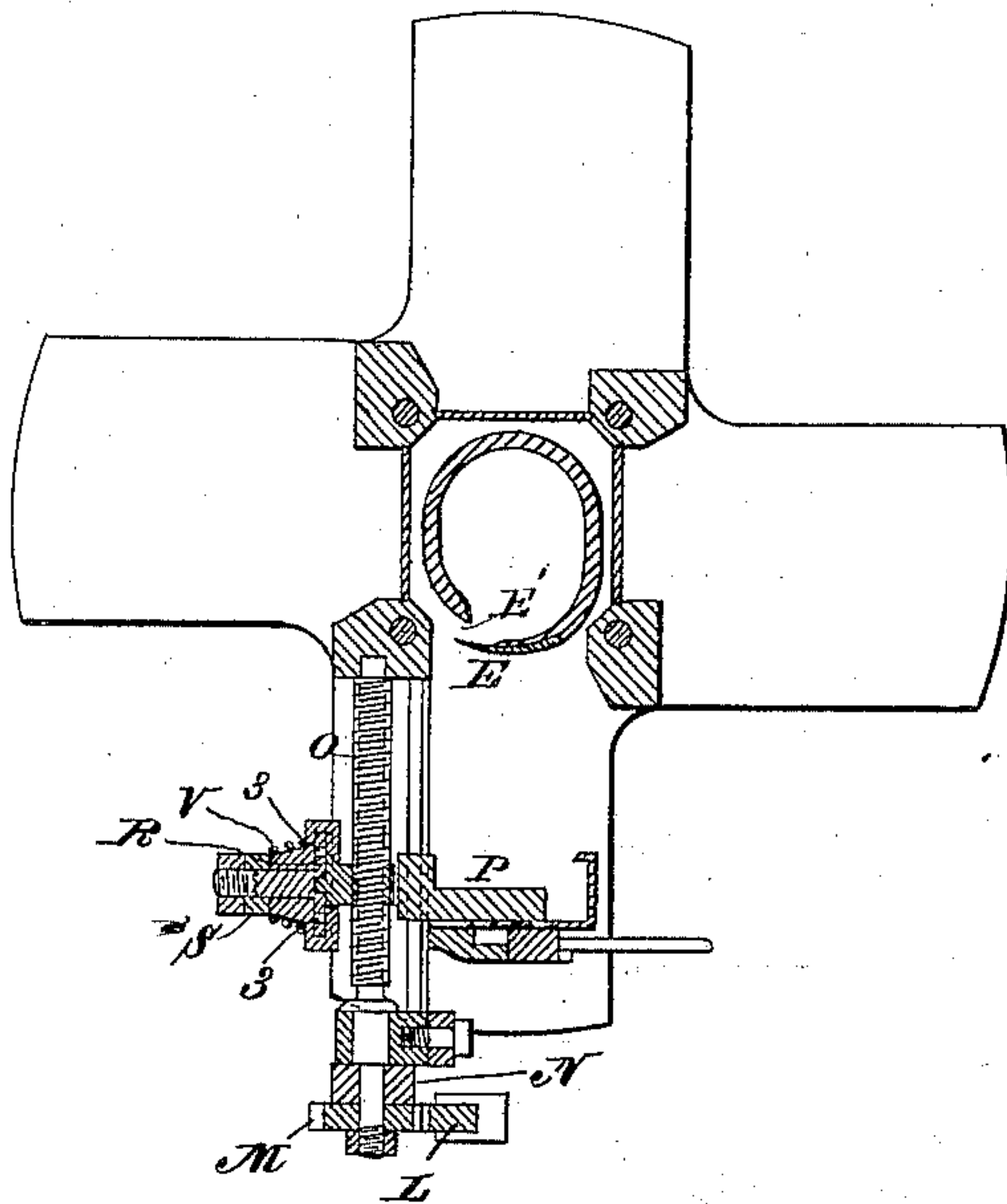
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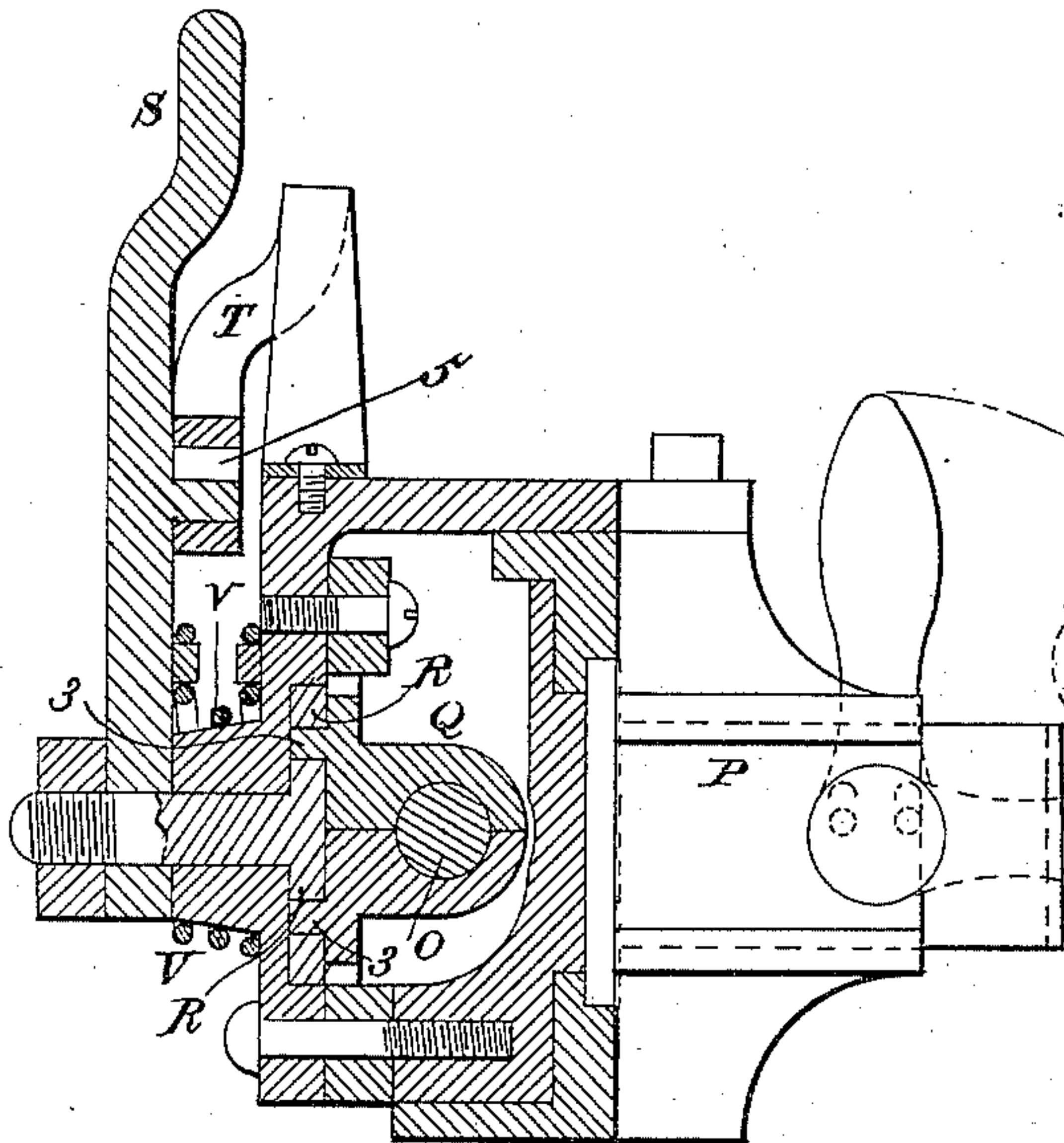
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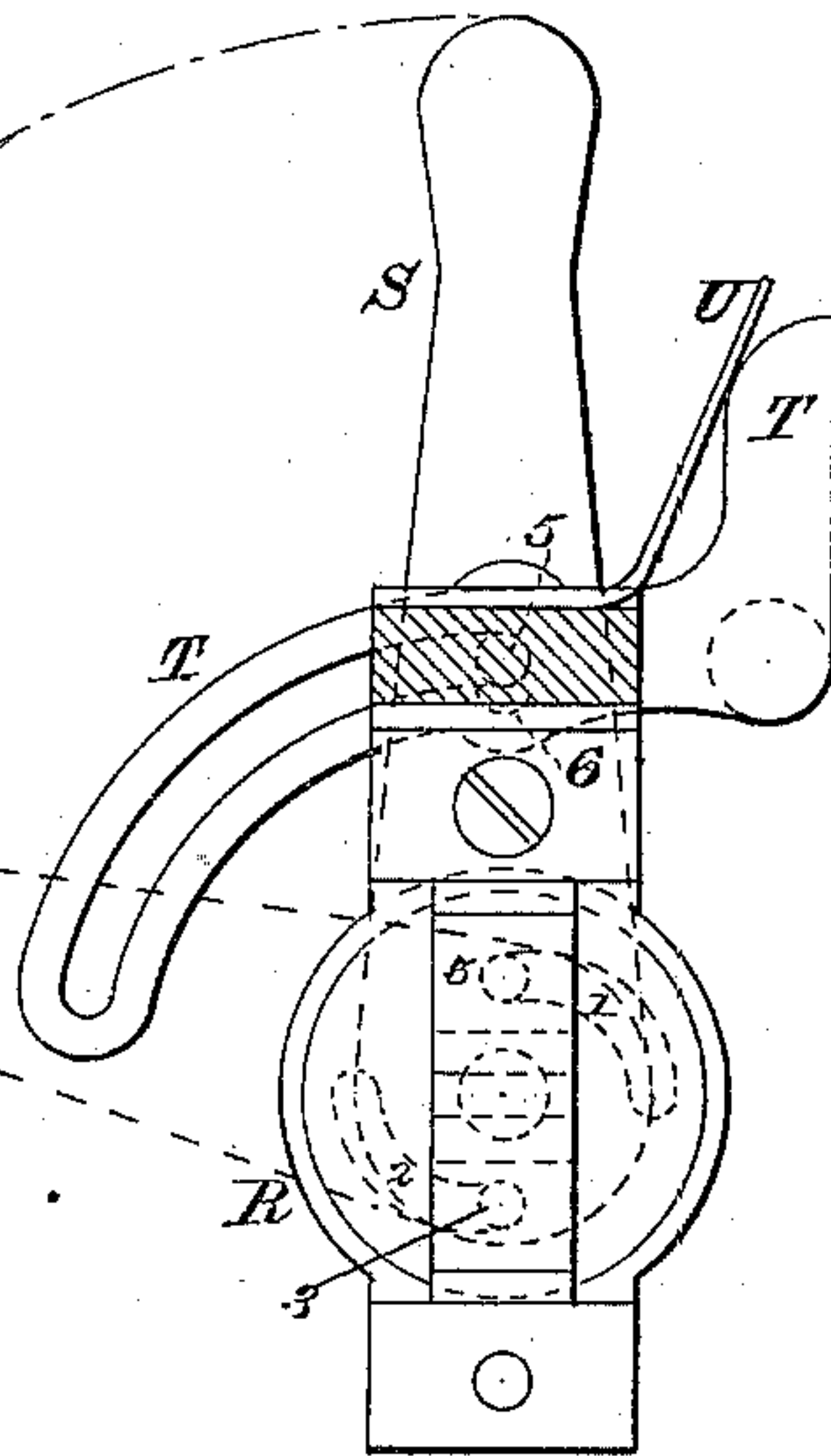
*Fig. 4.*



*Fig. 7<sup>a</sup>*



*Fig. 7.*



Witnesses:

J. C. Brecht,  
Albert G. Smith

Inventor:

David H. Brenner,  
By Edward Taggart  
Attorney.



# UNITED STATES PATENT OFFICE.

DAVID H. BRENNER, OF GRAND RAPIDS, MICHIGAN.

## MACHINE FOR CUTTING WOODEN DISHES.

SPECIFICATION forming part of Letters Patent No. 409,909, dated August 27, 1889.

Application filed April 25, 1889. Serial No. 308,515. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID H. BRENNER, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented a certain new and useful Machine for Cutting Wooden Dishes, of which the following is a specification.

This invention has for its object to provide novel mechanism for cutting dishes from wood blocks; and it consists in the combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a front elevation of a dish-cutting machine embodying my invention; Fig. 2, a front elevation of a part of the machine, to more clearly show the devices for reciprocating the facing-knife; Fig. 3, a top plan view of the same; Fig. 4, a detail sectional view on the line  $x x$ , Fig. 1; Fig. 5, a detail sectional view on the line  $y y$ , Fig. 1; Fig. 6, a detail sectional view on the line  $z z$ , Fig. 1; Fig. 7, a detail front view of the feed devices; Fig. 7<sup>a</sup>, a vertical sectional view of the same; Fig. 8, a plan view of the cutter; Fig. 9, a transverse sectional view of the same.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, where the letter A indicates the base-frame supporting the table A' and rotating shaft B, the latter being placed, as here shown, in a vertical position in the bearing W, to allow the dishes severed from the block to drop by their gravity through the opening in the shaft, as hereinafter explained.

I have shown the shaft in two sections, the lower one being designated by B and the upper one by B', and the section B is hollow, with the opening of sufficient size to allow the dishes severed from the block by the knife E to drop by gravity down through the shaft. The section B', I prefer to extend upwardly, where it is provided with a pulley C, or other suitable mechanism for giving it a revolving motion.

Instead of giving the shaft B and knife E a revolving motion, it may have a reciprocal rotary motion imparted to it by any suitable mechanism. I deem it unnecessary to show and describe such mechanism, as there are

various methods of giving reciprocal rotary motion to a shaft, which are well known.

The section B', I prefer to make hollow for the purpose of receiving a blast of air if it should be found necessary in order to drive the dishes out of the shaft with sufficient rapidity. The knife E is preferably attached to the enlarged or curved portion of the shaft by screws at each end, as shown in Fig. 8; but other attaching devices may be employed. The means of attachment is immaterial, inasmuch as the dish cut from the block passes inwardly and drops down through the hollow shaft.

If found desirable, the knife E may be made integral with the hollow shaft by merely tempering the shaft at one side of the slot E', through which the dishes pass into the shaft as they are severed from the block. A cam-wheel D is rigidly attached to the shaft, and a facing-knife F is adapted to be moved by the cam across the face of the wood block after each dish is severed therefrom. In the present example of my invention the facing-knife is operated by a knife-bar G, secured to the knife and connected with one end of a lever H, pivoted intermediate its ends, as at H', and connected to a cam-arm I, having a pin, roller, or wheel J, working in the cam-groove K of the cam-wheel D. The cam-arm I is furnished at its lower end with teeth or pins to form a rack-bar L, which engages a pinion M, to intermittently rotate the feed-screw O. One way of effecting this is to mount the pinion M loosely on the end of the feed-screw and connect the two, as by a ratchet-wheel and pawl N, in such manner that when the rack-bar moves in one direction the pinion M will rotate without turning the feed-screw by reason of the pawl sliding over the teeth of the ratchet-wheel, while in the movement of the rack-bar in the opposite direction the pawl will engage the ratchet-wheel and rotate the feed-screw. This type of clutch device, comprising the pinion, ratchet-wheel, and pawl, is a well-known contrivance where intermittent rotation of a shaft is desired, and therefore requires no further description or illustration. The feed-screw passes between the two parts of a divided or split nut Q, to which is connected a dogging block and clamp P of any ordinary



construction for engaging and moving the wood block from which the dishes are to be severed. The nut Q is adapted to be opened and closed at will to stop and start the feed-screw, and this may be effected by providing the sections of the nut with pins 3 3, working, respectively, in the curved slots 1 and 2 of a disk R. By turning the disk in one direction the pins are moved apart or away from each other, thereby separating the two parts of the nut, so as to disengage them from the feed-screw, while by turning the disk in the opposite direction the pins are carried toward each other, and thus engage the nut with the feed-screw. A lever S is rigidly attached to a part of the slotted disk R, and is provided with a pin 5, that moves in a curved slot of a pivoted lever T. By moving the arm S downward the nut Q is opened, as above described, to release the engagement of the nut with the feed-screw. A spring U, pressing on the slotted arm T, is designed to hold the pin 5 in a notch 6 of the lever until said pin is forced out and the handle S swung down for the purpose of disengaging the nut from the screw. A coiled spring V serves to move the lever S downward, and thereby separate the nut Q and release it from engagement with the feed-screw.

In the drawings I have shown a quadruple machine—that is, a machine having a revolving cutter adapted to operate upon four blocks of wood on the table; but it is evident that my machine may be applied to a single block or any other number which may be found desirable. I believe that by means of a blast which will drive the severed dishes out of the hollow shaft B four or more blocks may be operated on. The rotating knife or cutter and the facing-knife being operated from the same drive-shaft insures the exact movement of the two knives and enables me to run the machine with great speed, only limited by the difficulty of disposing of the dishes after they are severed from the block. The dogging-block and clamp P do not differ from clamp devices now in use, and therefore need no further description.

In case my machine is used in a horizontal position it would be necessary to apply a blast through the shaft in order to remove the dishes cut from the block; but when used as an upright machine, which is the way I design to use it, the dishes will drop from the machine as fast as they are severed from the block unless the machine were running at great speed and operating upon more than one block at a time.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

1. A machine for cutting concavo-convex dishes, comprising in its construction a ro-

tating drive-shaft having a cam, and a curved knife and a reciprocating facing-knife connected to and operated by the cam on the rotating drive-shaft, the knives so arranged with reference to each other that the reciprocating facing-knife faces the block after each cut by the curved knife, substantially as described.

2. In a machine for cutting wooden dishes continuously from a block of wood, the combination of a rotating knife, a hollow shaft upon which the knife is mounted, said shaft adapted to receive the severed dishes, and a facing-knife adapted to face the block after each cut of the rotating knife.

3. In a machine for cutting wooden dishes continuously from a block of wood, a revolving knife mounted on a hollow shaft provided with an opening for the reception of the dish as it is severed from the block, and an aperture extending the length of the shaft and adapted to receive a blast of air at one end for driving or forcing out at the other end of said shaft the severed dishes, substantially as described.

4. In a machine for cutting wooden dishes, the combination of a feed-screw, a slotted disk adapted to turn in opposite directions, a split nut adapted to engage with the threads of the feed-screw and provided with two pins, each engaging with a slot in the disk, a lever attached to the disk and provided with a pin or catch, a slotted arm or lever, a spring adapted to hold the arm or lever in position to lock the split nut in engagement with the feed-screw, and a coiled spring adapted through the lever to sever such engagement when the catch or pin is relieved from its locking position, substantially as described.

5. The combination of a rotating shaft and its knife, a facing-knife, a sliding knife-bar attached at one end to the facing-knife, a lever attached at one end to the knife-bar and at the other end provided with a pin or roller, and a cam-wheel rigidly attached to the shaft that rotates the knife and engaging said pin or roller, substantially as described.

6. The combination of a main drive-shaft, a cutter moved by the shaft, a grooved cam-wheel on the shaft, an arm having a device moving in the groove in the cam-wheel and terminating at the other end in a rack-bar, a pinion with which the rack-bar engages, and a ratchet operated by said pinion and engaging with the feed-screw and giving it an intermittent movement, substantially as described.

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

DAVID H. BRENNER. [L. S.]

Witnesses:

HUGH E. WILSON,

HARRY P. VAN WAGNER.