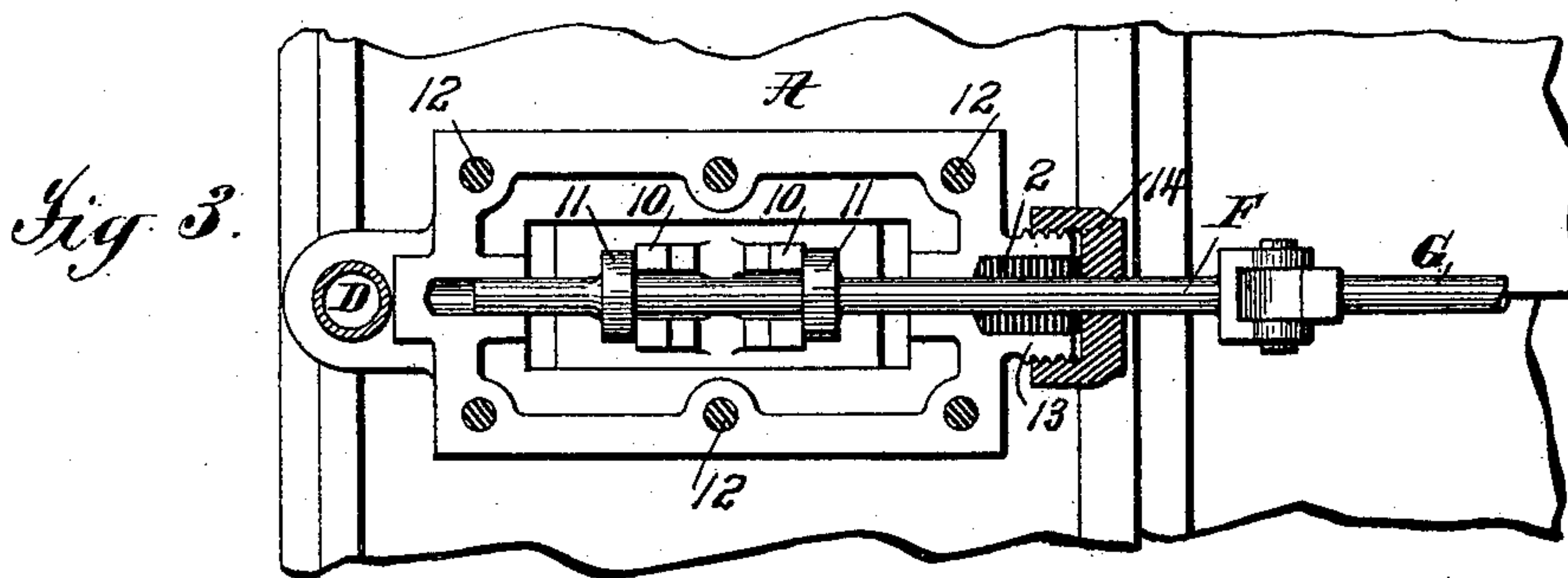
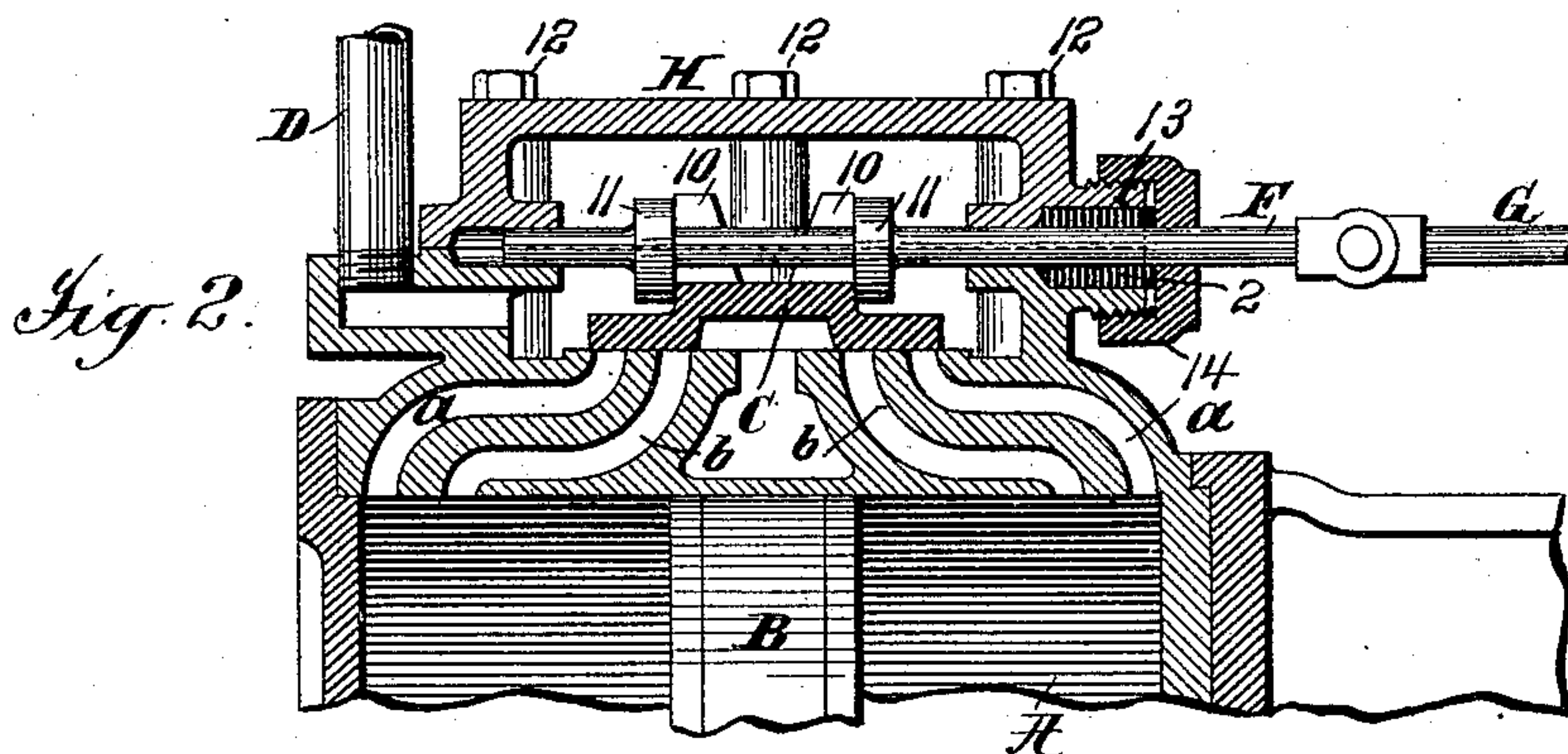
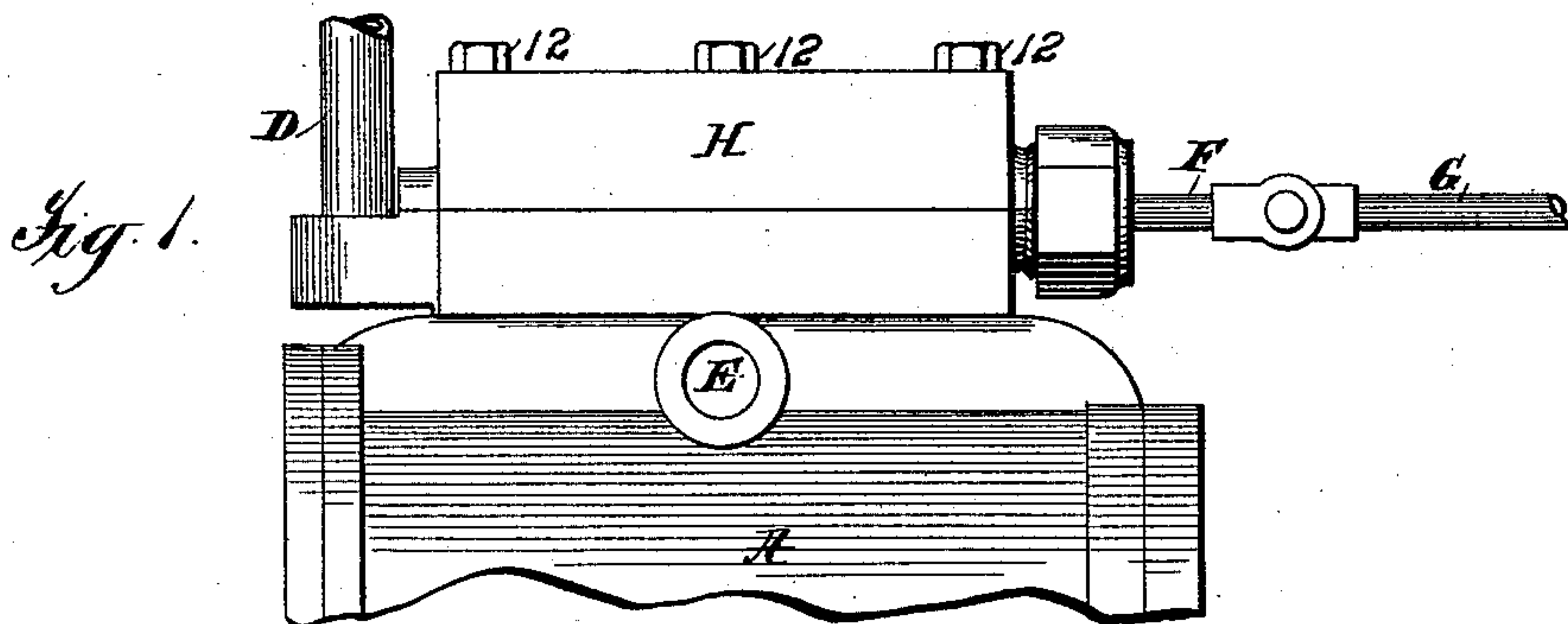


(No Model.)

F. W. JENKINS  
VALVE CHEST.

No. 539,742.

Patented May 21, 1895.



*Attest:*  
*Geo H. Botta*  
*T. F. Kehoe*

*Inventor:*  
*Frank W. Jenkins*  
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*Attys.*



# UNITED STATES PATENT OFFICE.

FRANK W. JENKINS, OF BROOKLYN, NEW YORK, ASSIGNOR TO HENRY R. WORTHINGTON, OF ELIZABETH, NEW JERSEY.

## VALVE-CHEST.

SPECIFICATION forming part of Letters Patent No. 539,742, dated May 21, 1895.

Application filed June 26, 1894. Serial No. 515,719. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK W. JENKINS, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Valve-Chests, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to provide an improved valve chest construction adapted especially for use on steam cylinders, the especial object being to make the valve rod and valve more accessible for removal or inspection than in constructions heretofore in use. I secure this result by dividing the valve chest centrally of the valve rod, so that the bearing for the valve rod is partly in the cover and partly in the body of the valve chest. By removing the cover, therefore, the valve rod is free to be lifted from its bearings in the body of the valve chest. By this construction I not only make the valve rod and valve more accessible, but secure other advantages which will be pointed out hereinafter.

For a full understanding of the invention, a detailed description will now be given of a construction embodying the same in its preferred form as applied to a steam cylinder of common construction with a slide valve and sliding valve rod, certain features of which construction form in themselves part of the invention, in connection with the accompanying drawings, forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the upper portion of a steam-cylinder and a steam-chest embodying the invention. Fig. 2 is a central vertical section of the same. Fig. 3 is a horizontal section taken between the cover and body of the steam-chest.

Referring to said drawings, A is the steam cylinder, B the piston, *a, b*, the induction and exhaust ports, C, the main valve which is shown of the common D form, and D, E, the induction and exhaust pipes, all these parts being of the usual or any suitable construction.

The valve D is provided with the usual ears 10 engaged at opposite sides by collars 11 on

the valve rod F for actuating the valve, this valve rod being shown as jointed outside the valve chest to a connecting rod G by which the valve rod is actuated from the valve motion of the engine, as usual, this joint being such as to permit the valve rod to be swung vertically.

The valve chest, as shown, is divided on a plane extending longitudinally and centrally of the valve rod at the latter, the upper part forming a removable cover H. It will be understood that the valve chest need not be divided on a single plane as shown, but that it is necessary only that the plane of division at the valve rod should be central thereto, the plane of division at other points being different if desired.

The body of the valve chest is shown as cast integral with the cylinder and the cover as formed of a single casting and secured thereto by bolts 12 passing through the cover and entering the body of the valve chest. It will be understood, however, that the cover and body of the valve chest may be formed and secured together in any other suitable manner. By this construction the bearings for the valve rod are divided between the cover and body.

The induction pipe D preferably connects with the body of the valve chest, as shown, so that the cover may be removed without interfering with the pipe.

The valve rod is shown as packed where it passes through the outside of the valve chest by a packing 2 of the usual form which lifts out and is restored to place by lifting or lowering the valve rod and secured in the stuffing box 13 projecting from the valve chest by a screw follower 14. Any other suitable method of packing and follower may be substituted for this construction.

It will be seen that when it is desired to inspect or remove the valve, it is necessary only to remove the bolts 12 and take off the cover H, the follower 13 being previously backed off, when the valve rod may be swung upward on its joint with the connecting rod G so as to remove it entirely from the valve and leave the latter free to be lifted out. If a construction be used in which the valve is connected to the rod, the valve will then be swung out of the valve chest with the rod. The parts



may be restored to position by swinging the valve rod F down into place, replacing and securing the cover, and screwing up the follower 13. Thus, it will be seen that in the preferred construction shown there are no more joints to make than in the old style chests with flat covers, and by breaking a single joint the valve rod can be lifted out. The simplicity of the operation as compared with the operation of removing the valve in present constructions is obvious. In addition to the advantages secured by the increased accessibility of the valve, the valve rod may be cheaper and more substantial in construction. It is possible, also, to form the collars 11 integral with the valve rod or permanently secure them thereto in any suitable manner, as shown in the drawings, instead of using screw collars, as at present. This preferred construction forms a part of the invention, and will be found very desirable, as it prevents any tampering with the adjustment of the valve, so that it is certain that the latter will remain exactly as arranged by the manufacturer.

It will be understood that the invention broadly considered is not to be limited to a sliding valve and rod but is applicable also in connection with valves and rods having other movements; also that the invention may be applied in connection with cylinder and valve chest constructions of other general form, and that many modifications may be made in the construction shown without departing from the invention.

What is claimed is—

1. The combination with a cylinder, valve and valve rod, of a valve chest formed of a body and cover, the line of division between the body and cover being central of the valve rod, and a stuffing box for the valve rod also

divided centrally of the valve rod, substantially as described.

2. The combination with a cylinder, valve and valve rod, of a valve chest formed of a body and cover, the line of division between the body and cover being central of the valve rod, and a valve rod connection outside the valve chest permitting the rod to be lifted out of its seat when the cover is removed, substantially as described.

3. The combination with a cylinder, valve and valve rod, of a valve chest formed of a body and cover, the line of division between the body and cover being central of the valve rod, a stuffing box for the valve rod also divided centrally of the valve rod, and a valve rod connection outside the valve chest permitting the rod to be lifted out of its seat when the cover is removed, substantially as described.

4. The combination with a cylinder, slide valve and sliding valve rod, of a valve chest formed of a body and cover, the line of division between the body and cover being central of the valve rod, and a stuffing box for the valve rod also divided centrally of the valve rod, substantially as described.

5. The combination with a cylinder, slide valve, and valve rod provided with non-adjustable collars for actuating the valve, of a valve chest formed of a body and cover, the line of division between the body and cover being central of the valve rod, substantially as described.

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

FRANK W. JENKINS.

Witnesses:

ARTHUR L. KENT,  
C. J. SAWYER.