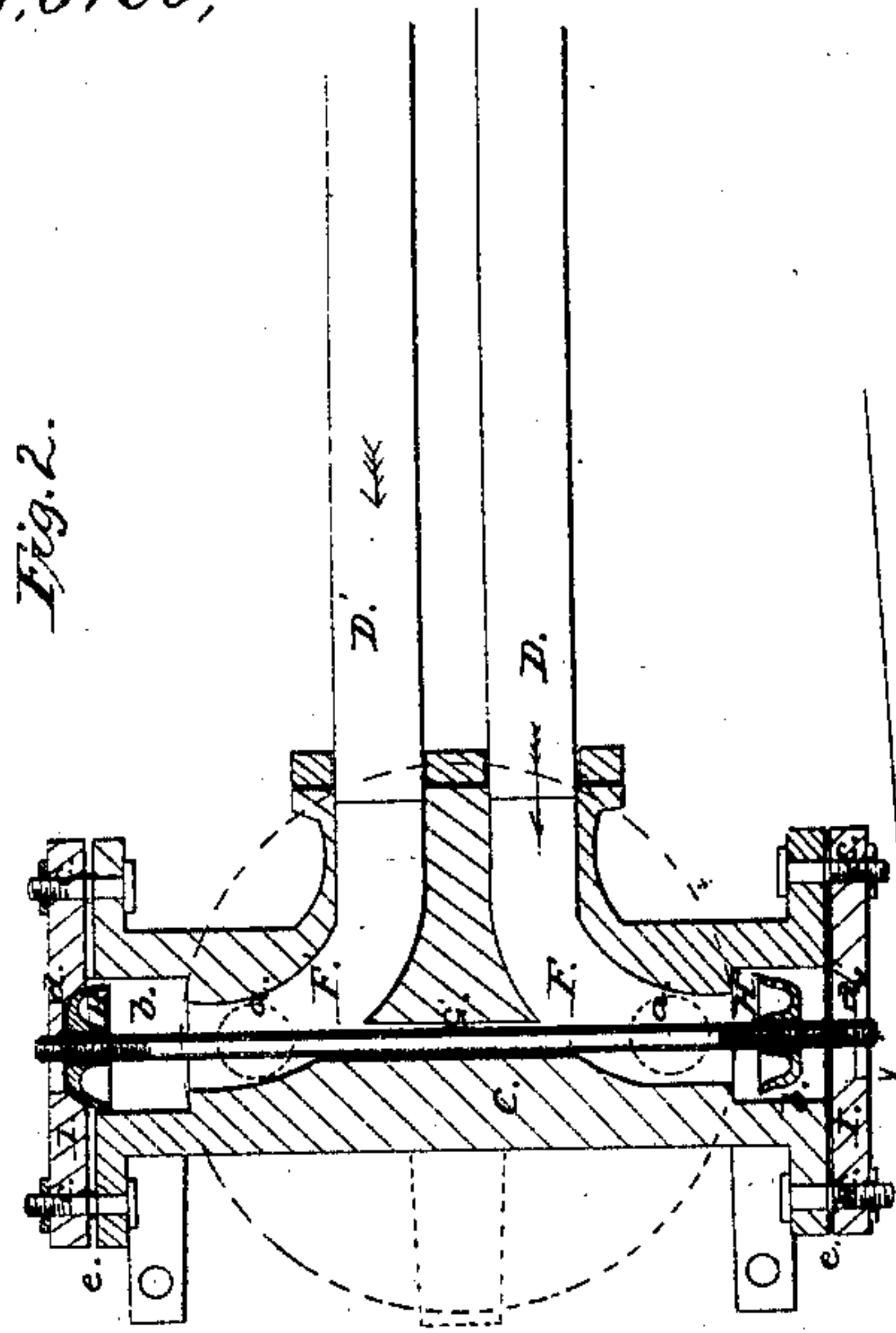


*J.D. West,*

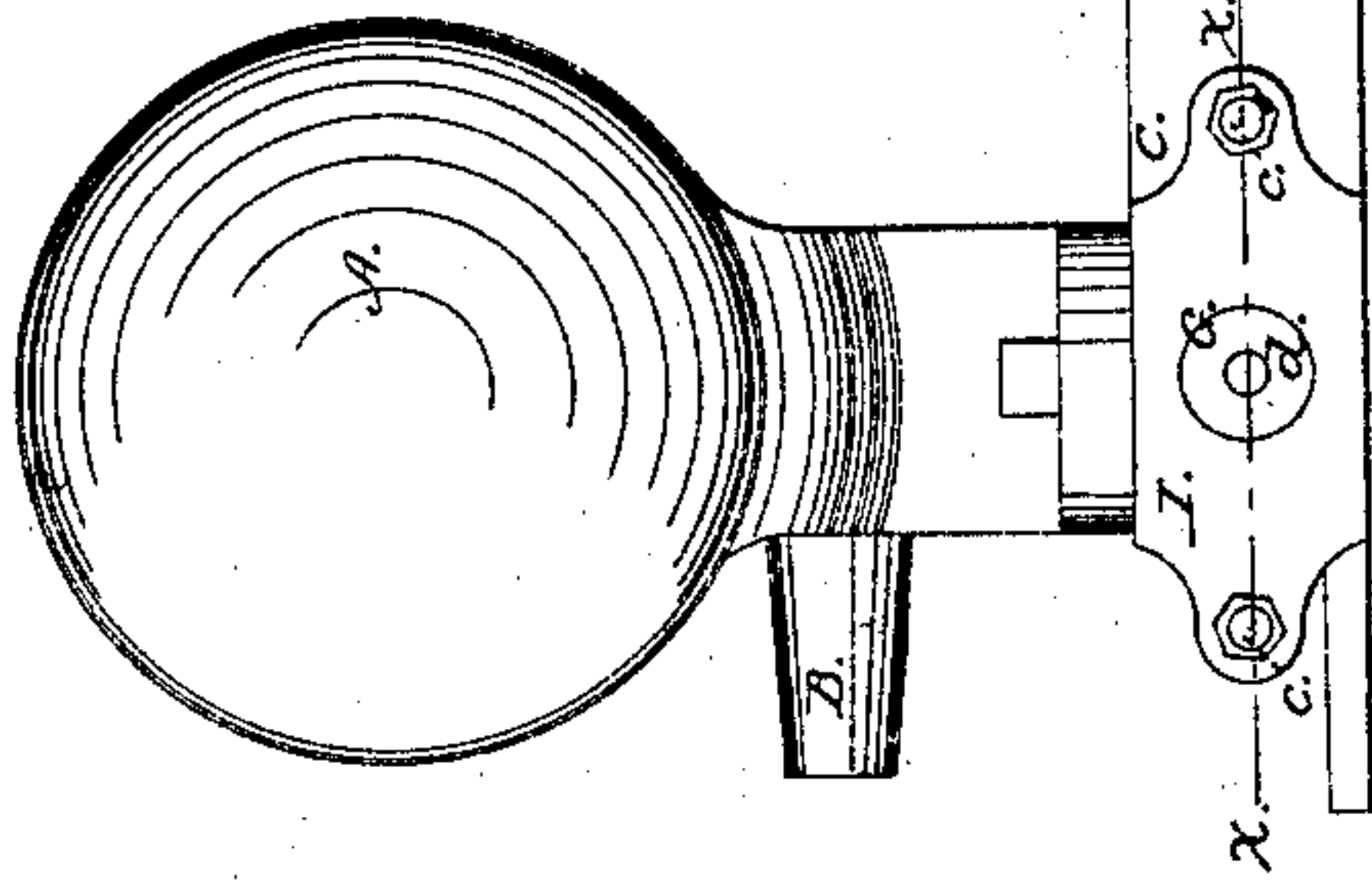
*Hydraulic Ram*

*Nº 11,626,*

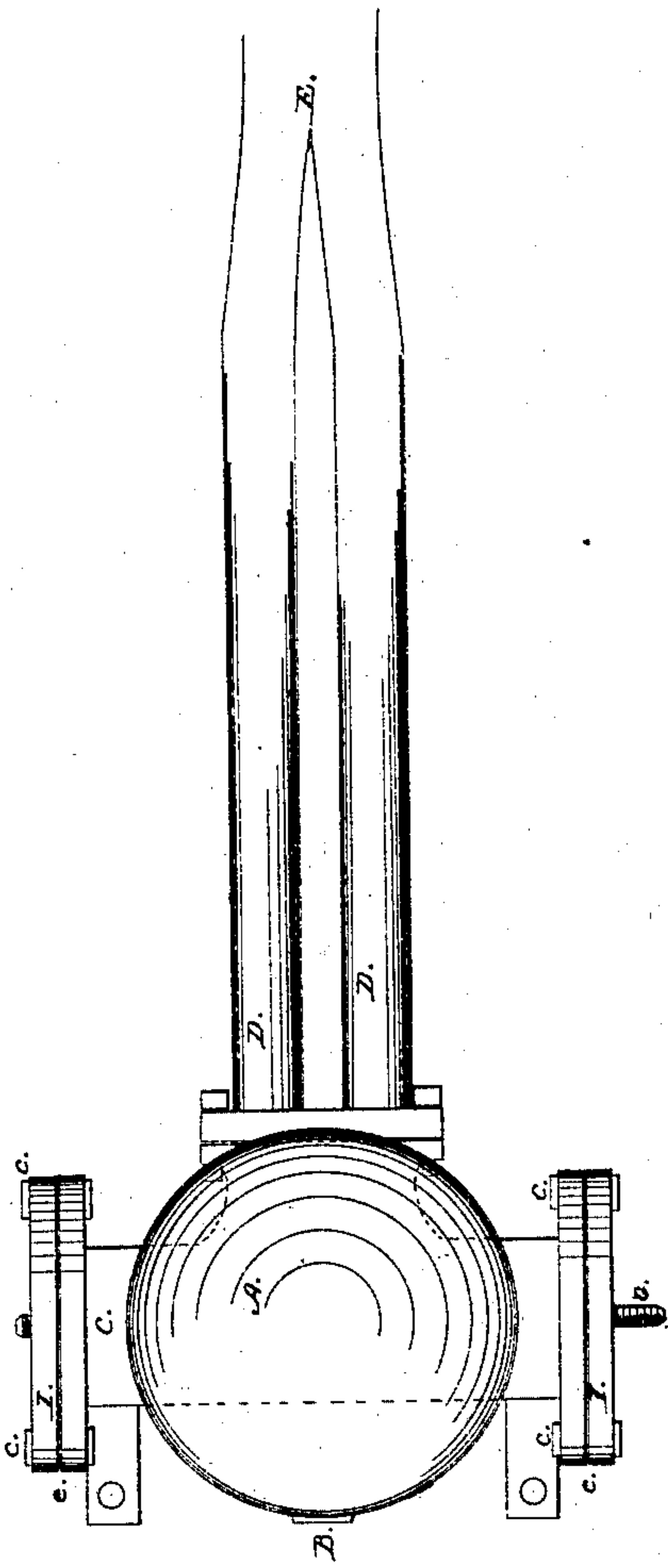
*Patented Aug. 29, 1854.*



*Fig. 1.*



*Fig. 3.*



*Witnesses:*

*J. H. Wales.*

*J. H. Hamilton.*

*Inventor:*

*J. D. West.*

# UNITED STATES PATENT OFFICE.

JOSEPH D. WEST, OF NEW YORK, N. Y.

## HYDRAULIC RAM.

Specification of Letters Patent No. 11,626, dated August 29, 1854.

*To all whom it may concern:*

Be it known that I, JOSEPH D. WEST, of the city, county, and State of New York, have invented a new and useful Improvement in Hydraulic Rams; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a side view of my improved ram. Fig. 2, is a horizontal section of ditto taken at the line, *x, x*, Fig. 1. Fig. 3, is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of my invention consists in a peculiar arrangement of valves, as will be hereafter fully described, whereby the ram is made double acting, and the use of weighted or spring valves dispensed with.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, Figs. 1 and 2, represents the air chamber of the ram, constructed in the ordinary manner, and having the usual snifting valves at its lower part.

B, is the nozzle or joint at the lower part of the air chamber, to which a rising main or pipe is secured as usual.

C, is the base of the ram on which the air chamber A, rests, and D, D, are pipes connected to a main pipe E, see Fig. 3, leading from the spring or source. The pipes D, D, are connected to the base, C, and communicate with curved passages F, F', which terminate at the ends of the base, see Fig. 2. The curved passages F, F', communicate with the nozzle B, by passages (*a*), (*a*), the position of which are indicated by dotted lines, Fig. 2.

G, Fig. 2, is a rod which passes through the base C, longitudinally, and provided with a valve H, at each end, said valves being cup or disk shaped, and working on screw threads at the ends of the rod. The valves fit or work in recesses (*b*), (*b*), in the base, and by means of the screw threads on the end of the rod, G, the valves may be adjusted the proper distance apart, by merely turning them upon the rod.

I, I, are heads or plates which are secured by screw bolts (*c*), to the ends of the base. These plates have circular openings (*d*), at their centers, as shown in Figs. 1 and 2. To prevent leakage, suitable packing (*e*), may be placed between the ends of the base, and the heads or plates.

Operation: The water passes from the spring or source through the main pipe E, into the branch pipes D, D, and thence into the curved passages F, F', one of which is closed by its valve, as shown in Fig. 2, said valve fitting against the opening *d*. The water escapes through the opposite passage, see arrow Fig. 2, and when it has acquired sufficient velocity, it forces the valve H', against the opening (*d'*), see Fig. 2, the opposite valve opening at the same time, and the water being suddenly checked by this operation of the valves, is, as usual, forced by its momentum, through the passages (*a*), (*a*), into the pipe attached to the nozzle B. When the valve of one passage F, is closed, the water flows through the opposite passage, and vice versa.

By the above improvement, I dispense with weighted or spring valves, which require to be regulated according to the head or fall of the spring or source. By my arrangement, it will be seen, that the two valves, attached to the same rod, balance each other, and will work evenly and well with a varying head of water.

I do not confine myself to the precise position of the rod G, as herein shown, for that may be differently arranged.

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

Having two valves, H, H', placed at the ends of a rod G, the valves being fitted at the ends of passages, F, F', which are connected by branch pipes, D, D, to a main pipe E, leading from the spring or source; said valves being constructed and arranged as shown, or in an equivalent way, and operating in the manner, and for the purpose as set forth in the body of this specification.

J. D. WEST.

Witnesses:

S. H. WALES,  
J. W. HAMILTON.