

No. 627,140.

Patented June 20, 1899.

J. POWELL.
STRAIGHTWAY VALVE.
(Application filed Aug. 18, 1898.)

(No Model.)

FIG. 1.

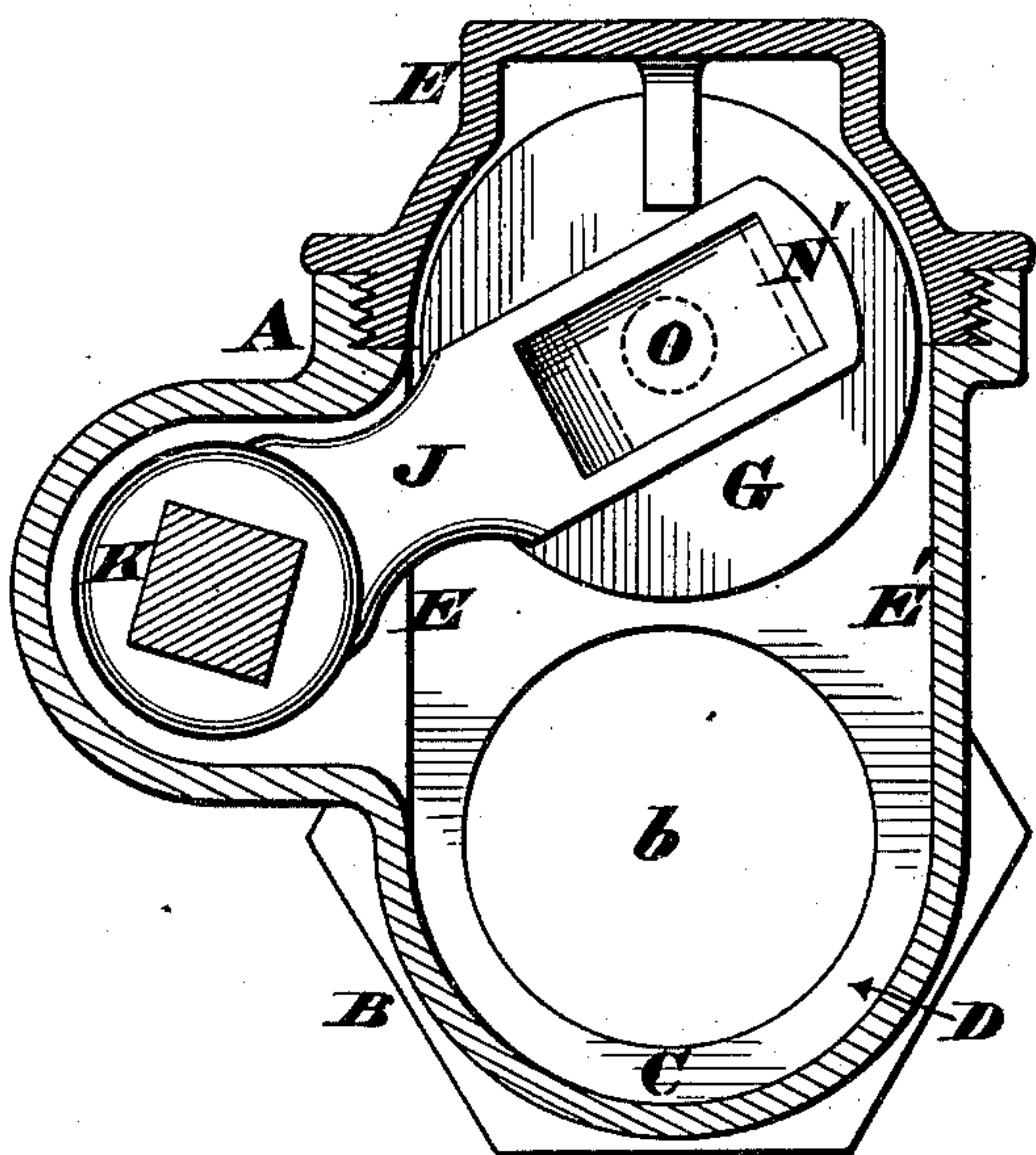


FIG. 2.

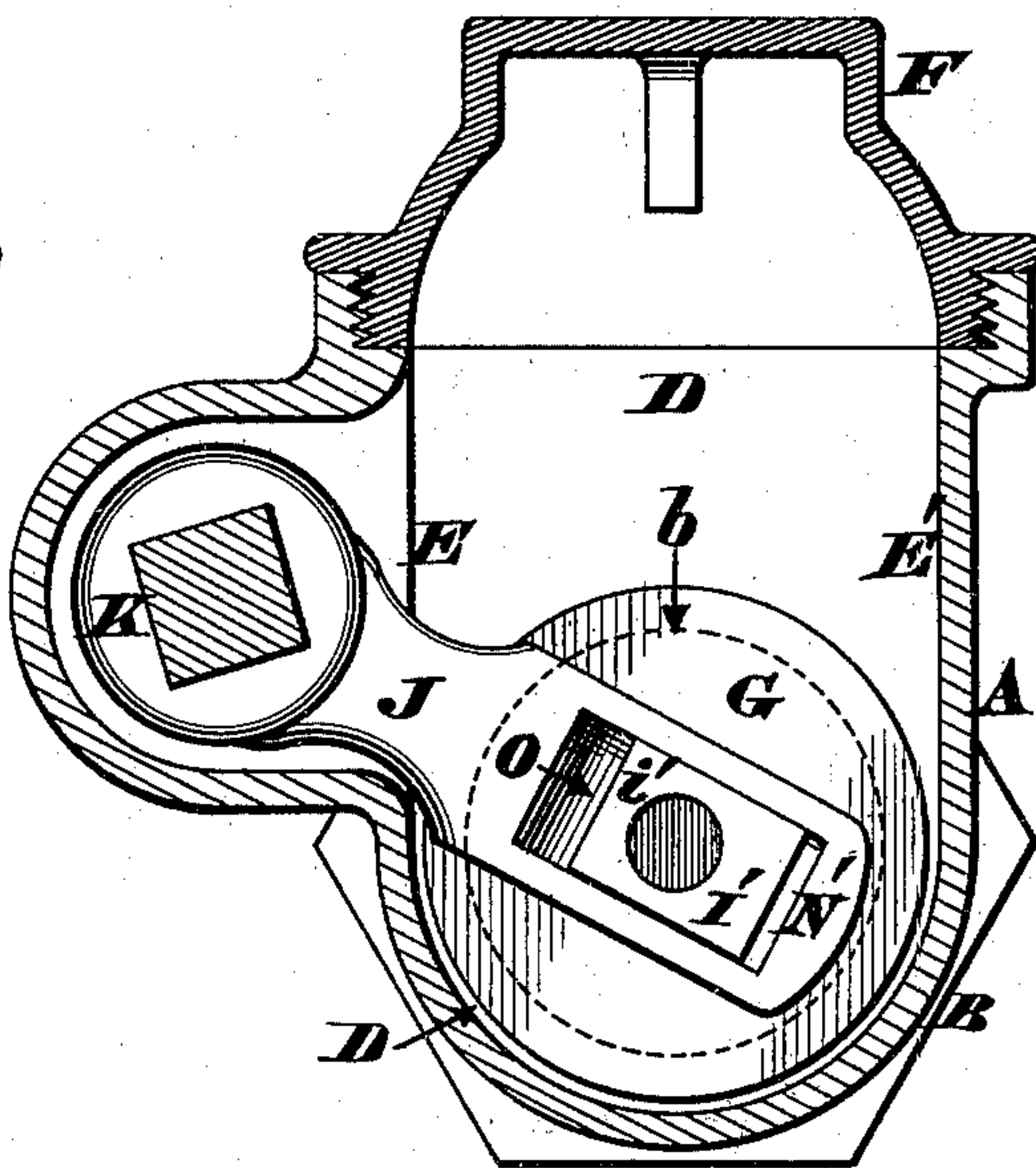


FIG. 3.

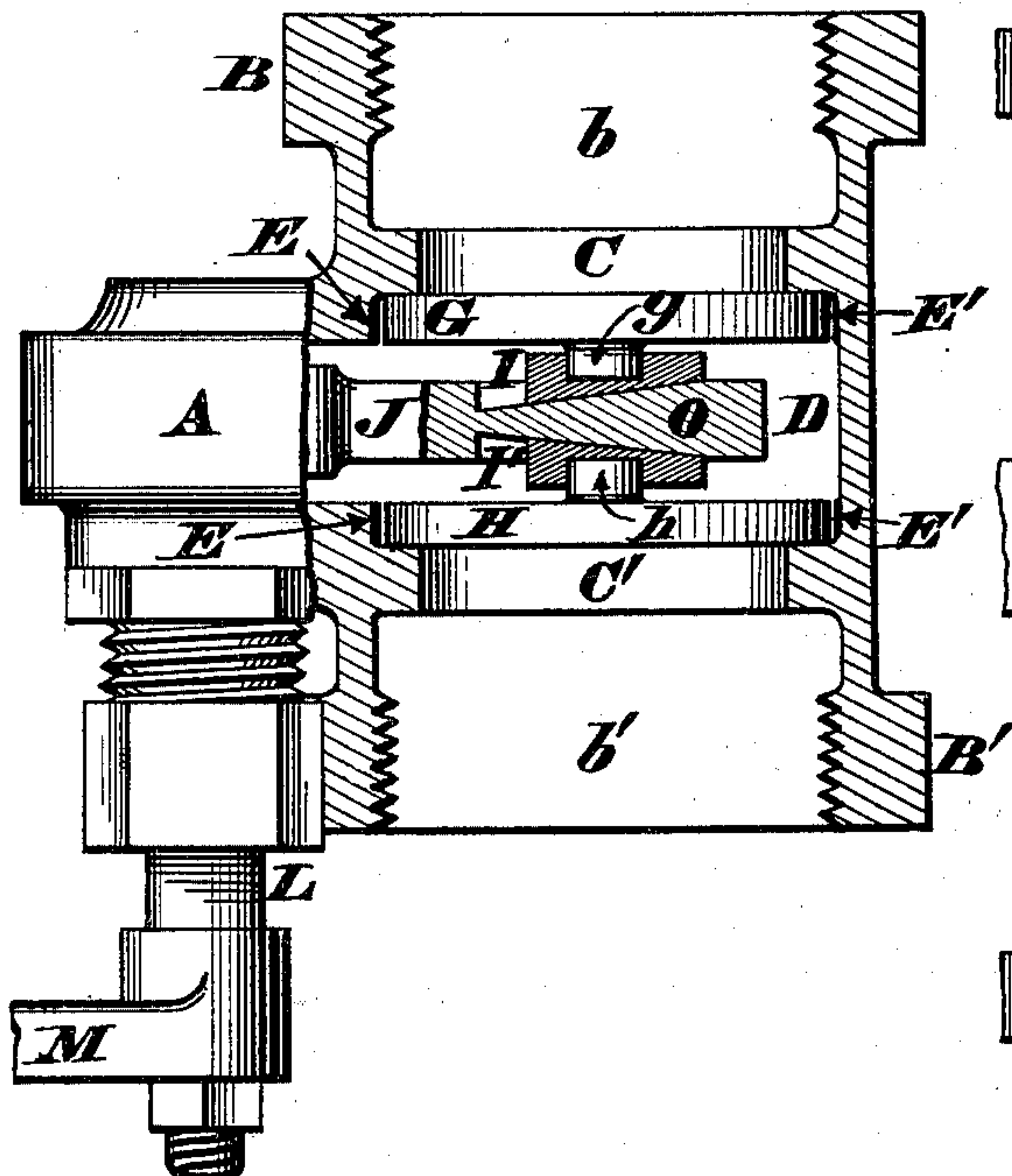
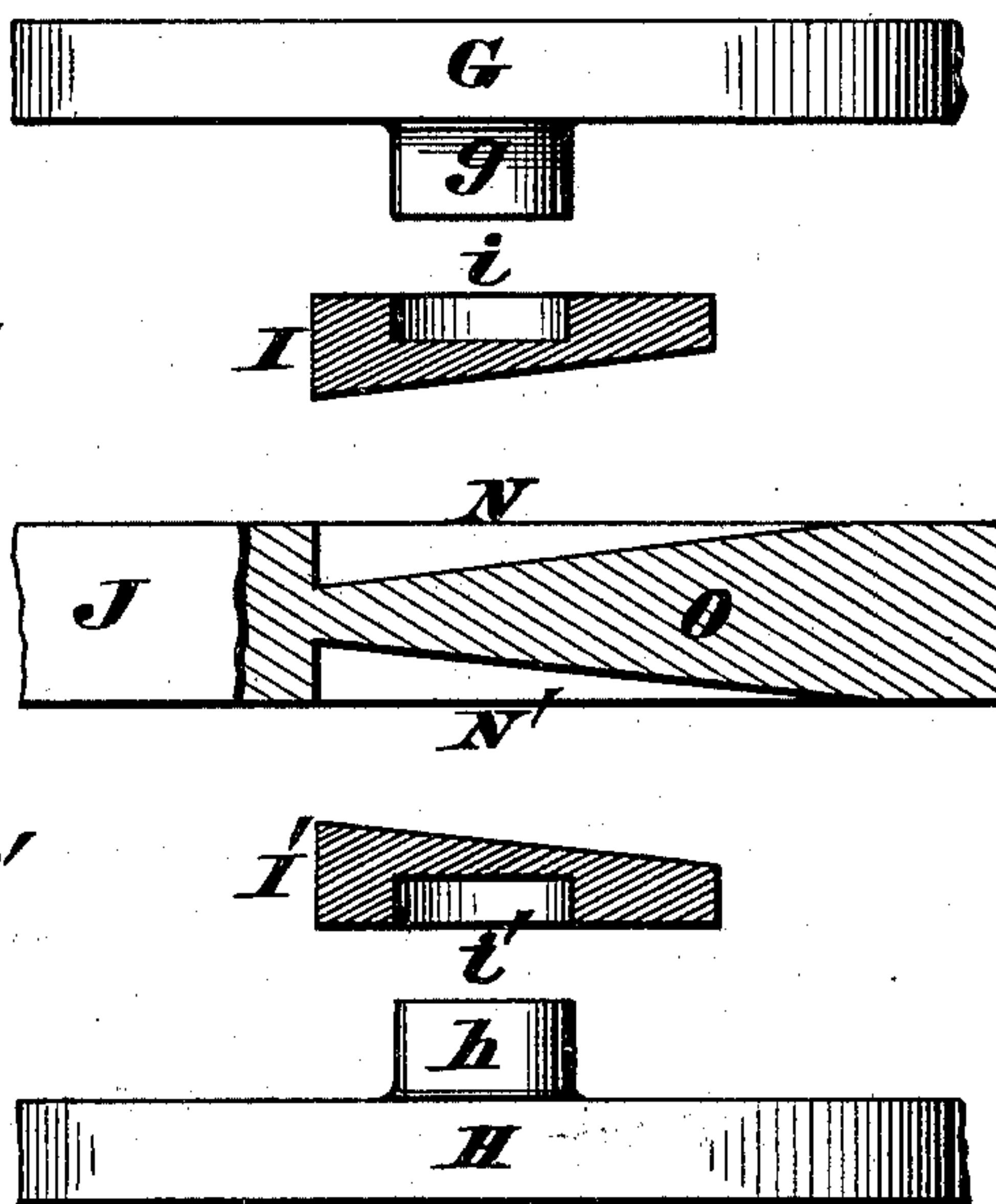


FIG. 4.



Attest
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att'y.

UNITED STATES PATENT OFFICE.

JAMES POWELL, OF CINCINNATI, OHIO, ASSIGNOR TO THE WILLIAM POWELL COMPANY, OF SAME PLACE.

STRAIGHTWAY VALVE.

SPECIFICATION forming part of Letters Patent No. 627,140, dated June 20, 1899.

Application filed August 18, 1898. Serial No. 688,893. (No model.)

To all whom it may concern:

Be it known that I, JAMES POWELL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Straightway Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form a part of this specification.

This invention relates to those straightway valves which consist, essentially, of a vibrating lever having a pair of disks loosely coupled to its free end in such a manner as to be firmly wedged against a pair of opposing seats when the lever is properly operated; and my present improvement is more nearly allied to the peculiar construction of such valves shown in Letters Patent No. 533,991, granted to James H. Layman February 12, 1895. In said patent the disks have pivots that traverse perforations in a longitudinally-divided carrier that slides back and forth on a vibrating lever as the latter swings up and down within an inclosing shell, the ends of said pivots being in direct contact with the sides of a wedge near the free end of said lever and integral therewith. This construction answers very well for many purposes; but there are cases where it is inexpedient to use a divided carrier, and in such emergencies I employ a pair of automatically-sliding tapering carriers whose opposing faces bear directly against the sides of the wedge, while the outer faces of said carriers are pitted to receive the valve-pivots, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a vertical section of my straightway valve, taken in the plane of its vibrating lever, the free end of which is swung up to elevate the loosely-coupled disks and thereby open or uncover the fluid passages or channels. In this illustration one of the disks and its carrier are omitted, and the position of the other carrier is indicated by dotted lines. Fig. 2 is a similar section of the valve, its lever being swung down to close both of the fluid-passages, one of the disks being omitted, but its carrier being shown in its proper place on said lever. Fig. 3 is a sectionized plan of the

closed valve. Fig. 4 is an enlarged longitudinal section of the lever-wedge, the valves, and the two tapering carriers, the latter being detached from said lever.

A represents the inclosing shell or casing of a straightway valve, and B B' are the pipe ends thereof, which pipe ends are traversed by ordinary channels or fluid-passages *b b'*, terminating with seats C C', whose ports communicate with the lower portion of a chamber D, having duplicate guides E E' E' at its opposite sides. F is a cap secured upon this chamber. Adapted to be forced against these seats C C' are disks or valves G H, from whose inner faces project short lateral studs or pivots *g h*, as shown in Figs. 3 and 4. These pivots enter pits *i i'* in the outer faces of a pair of valve-carriers I I', which faces are about parallel with the backs of the valves G H, but the inner faces of the carriers are sloping or inclined.

J is the vibrating lever secured to the square portion K of a rock-shaft L, having an operating-handle M. N N' are longitudinal grooves made in the opposite sides of this lever and near its free end, said grooves being deepest at their ends toward the axis of said lever and gradually dying out toward its free end, as more clearly shown in Fig. 4; but in some constructions of the valve this shape of said grooves may be exactly reversed, so as to dispose their deeper portions toward the end of the lever instead of away from it. Consequently an integral wedge O is thus formed on said lever, and the inner sides of the valve-carriers I I' slope at substantially the same angles as the sides of said wedge.

The operation of this valve is substantially the same as the one described in the patent previously alluded to—that is to say, when lever J is swung down, as shown in Fig. 2, the two carriers I I' gradually slide along the wedge O of said lever, thereby forcing the disks G H very firmly against the seats C C' and effectually closing the fluid passages or channels of the shell; but when said lever is swung up, as shown in Fig. 1, the valves or disks are securely retained in their open positions and permit an unobstructed flow through said channels *b b'*. From this description it is evident the pivots *g h* bear

solely within the sockets or pits *i i'* of the independent sliding carriers I I' and are nowhere in contact with the wedge O. Consequently there is no danger of grooves being
5 cut in the sides of the wedge by the sliding action of said pivots, due to the up-and-down motion or vibration of the swinging lever J. Again, these carriers can be made of very
10 hard metal, so as to reduce their wear and tear to a minimum; but if they should break or become injured in any manner whatever it would be an easy matter to insert new ones and without removing the lever from the shell or casing.

15 I claim as my invention—

1. The combination, in a straightway valve, of an inclosing shell having a pair of fluid-passages, a pair of duplicate guides, and a pair of valve-seats; a vibrating lever fitted
20 within said shell, and having an integral longitudinal wedge whose thinner end is disposed toward the axis of said lever; a pair of ta-

pering carriers adapted to slide against the sides of said wedge and having pits or sockets in their outer faces; and a pair of valves
25 or disks having lateral pivots bearing within said pits, for the purpose described.

2. The combination, in a straightway valve, of an inclosing shell having a pair of fluid-passages, a pair of duplicate guides, and a
30 pair of valve-seats; a vibrating lever fitted within said shell, and having an integral longitudinal wedge; a pair of tapering carriers adapted to slide against the sides of said wedge, and having pits in their outer faces;
35 and a pair of valves or disks having lateral pivots bearing within said pits, for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES POWELL.

Witnesses:

JAMES H. LAYMAN,
JOHN C. ROGERS.