

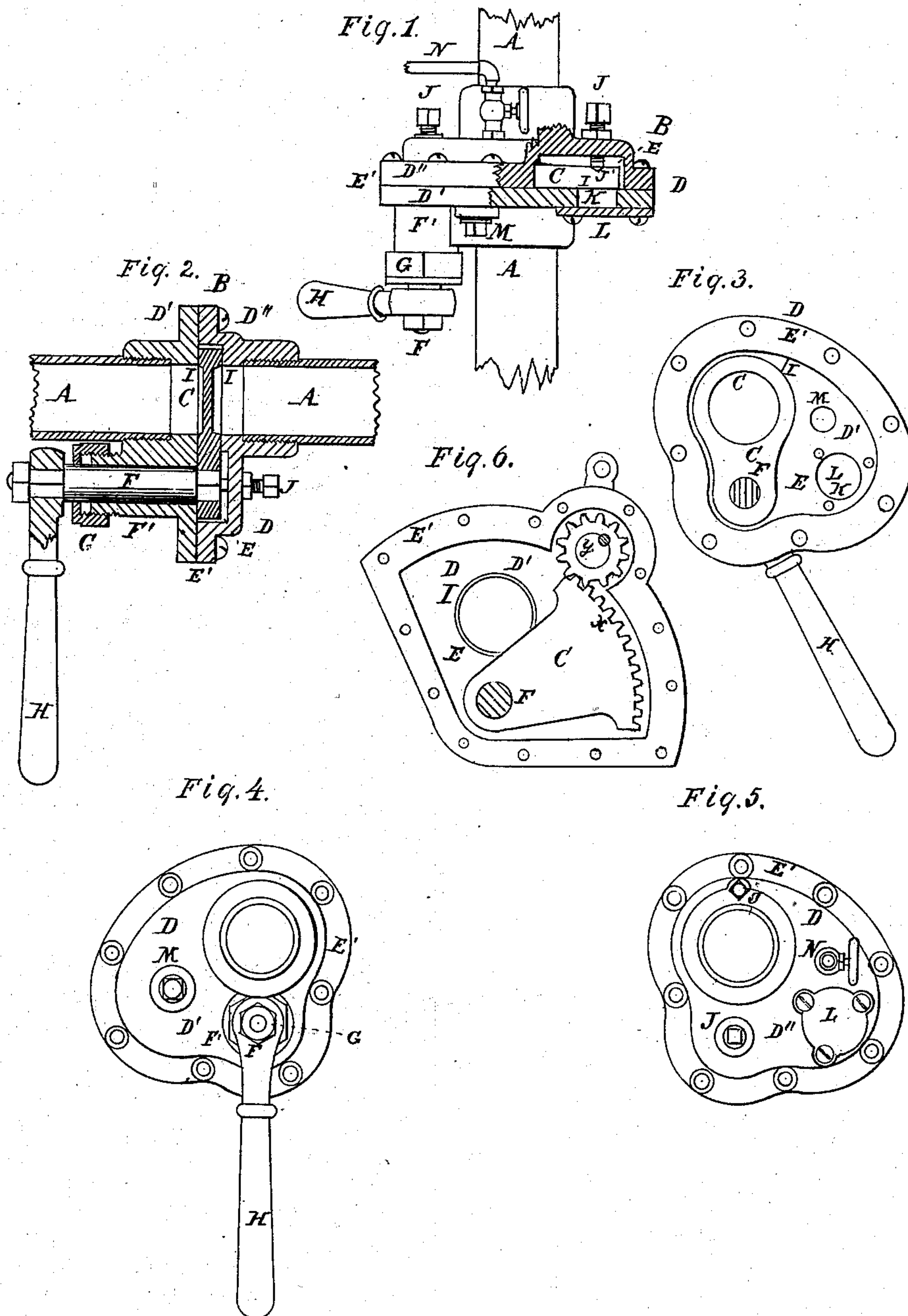
(No Model.)

R. BOEKLEN.

GATE VALVE.

No. 261,826.

Patented Aug. 1, 1882.



Witnesses.

Henry H. Paulsen.
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Inventor.

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UNITED STATES PATENT OFFICE.

REINHOLD BOEKLEN, OF GOSHEN, NEW YORK, ASSIGNOR OF TWO-THIRDS
TO BURHANS VAN STEENBERGH, OF SAME PLACE.

GATE-VALVE.

SPECIFICATION forming part of Letters Patent No. 261,826, dated August 1, 1882.

Application filed January 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, REINHOLD BOEKLEN, of the town of Goshen, in the county of Orange and State of New York, have invented certain
5 new and useful Improvements in Gate-Valves, of which the following is a specification.

The object of this invention is to have a gate-valve with a straight unobstructed passage through it, but of a less expensive construction than those heretofore in use, with provision to adjust, tighten, and lock it upon its seat, and also with provision to clear it from all obstructions, and suitable at any time to conduct gas, soap, tar, beer, sugar, sirups, and
15 many chemical fluids.

The invention consists essentially in the combination and arrangement of the vibratory gate and the jointed semi-valve-chest sides, one of them having the seat of the valve and
20 the other with adjusting and stopping set-screws, and both provided with blow-off plugs or cocks or means for the purpose of drawing off the waste matter; as hereinafter more fully set forth.

In the drawings annexed, Figure 1 represents a side elevation of the valve as applied to a vertical pipe and constructed according to my invention. A part of its chest is shown removed, so as to exhibit its interior. Fig. 2 is
30 a longitudinal central section of the same applied to a horizontal pipe. Fig. 3 is a front view of the interior of the same with the cap of the chest removed. Fig. 4 is a face view of the exterior front side of same. Fig. 5 is a face
35 view of the rear side of same. Fig. 6 is an interior face view of the valve and chest, its construction modified respectively to a more powerful operating-gear.

A A represent the pipe-connection to which
40 the valve B is attached or applied, and to attach the valve to the pipe the same is either furnished with opposite threaded hubs, as shown, with flanges to bolt to or with bell-hubs to lead and cork the connecting-pipes A
45 A to it.

C represents the gate, and D the valve chest or case, which is constructed of two semi-sections, D' and D'', with an interior segmental chamber, E, and each with a similar-shaped
50 flange, E', on its edge, to bolt one upon the other. The gate C, when operated, vibrates in the

chamber E, for which purpose said chamber is made sufficiently wide to allow the gate, when opened, the full passage of the core of the pipe A. And the gate also has a fulcrum-arbor, F, for which a bearing, F', is provided on the valve-chest. According to the purpose for which the valve is to be used and its size, the construction of the moving-gear is made with more or less leverage. 55

In valves requiring ordinary small power to move the gate the fulcrum-arbor F passes through a hub for its bearing F', formed on the chest, and provided with a stuffing-box nut, G, and to its end is attached or attachable a
60 wrench or hand-lever, H, by means of which the gate is vibrated and closed over the seat I or opened therefrom. 65

In valves of large size, or those requiring considerable power to operate, the gate has a segmental toothed rim, x, and a pinion-gear, y, is employed to engage said rim. The pinion-gear in this case is furnished with an arbor passing through a threaded hub, furnished with a stuffing-box nut, and to the arbor is applied a lever, crank, handle, or wrench, and said threaded hub is formed on the side of the chest. In gates requiring more powerful leverage to operate them the pinion-gear is substituted by means of a screw-worm, the rim of
70 the gate is toothed to engage the worm, and the worm-shaft passes through a tangential-arranged hub cast on the chest and provided with the proper stuffing-box to hold said shaft packed tightly, and the lever, crank, handle, 75
80 or wrench is applied to the outside end of said worm-shaft. 85

In the application of the valve for certain purposes a seat for the gate may be provided on each side of it or on each section D' and
90 D'', as shown in Fig. 2.

The gate in all cases is made slightly wedge-shaped, so as to become tightened as brought home to close and to open readily. In most cases it is sufficient to form the seat only on one of
95 the sections D' or D'' of the valve-chest, as shown in Fig. 1. In such case the valve is always arranged on the pipe-connection to have the pressure of the gas, air, steam, or other fluid upon the gate, so as to force it upon its
100 seat.

J J represent locking and adjusting screws

applied in the section D'', or section opposite the bearing-valve seat. Said screws are used for the purpose of adjusting the gate against its seat, to cause it to close tightly, to take up its wear, and serve also, by setting them upon the gate tightly, as a means for locking the gate positively whenever such is required.

K represents a waste cup or pocket, which is arranged on the downward part of the case or chest, as shown in Figs. 1, 3, and 5. Its object is to accumulate and collect all residue, grit, or tar, to take it from the gate, and thereby avoid the clogging and obstructing the operation of the gate. Said waste-cup K is furnished with the cup or lid L, to remove the collected tar, grit, or other residue.

M represents a blow-off screw-plug, (or it may be a valve;) and N a suitable plug or valve, which is provided for readily attaching a hose or other connection with water, steam, or other requisite fluid under pressure. The object of said plug or valve M and plug or valve N is to readily introduce steam, water, air, or some suitable compressed solutive fluid or agent into the valve-chest to soften, dissolve, and blow out any residue or other substance causing the clogging and obstructing the motion of the gate, which operation is performed by opening the valve N and withdrawing the

plug M. Said clogging and obstructions are very frequent, and cause great inconvenience in gas-houses, soap-factories, breweries, refineries, and chemical works, and many other establishments where substances of an adhesive or glutinous nature are used or manufactured. A cavity, J', is provided in the valve to lock it, by the screw J, when required, permanently.

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

1. The combination and arrangement of the gate C and valve-chest D with the locking and adjusting screws J J, substantially as and for the purpose herein described.

2. The combination and arrangement of the gate C and the valve-chest D with the waste-cup K and its cap L, substantially as and for the purpose herein stated and shown.

3. The combination of the valve-chest D and the gate C with the blow-off plugs or valves M and N, provided and arranged substantially as and for the purpose herein mentioned.

In witness whereof I have hereunto set my hand this 5th day of January, 1882.

REINHOLD BOEKLEN.

In presence of—

HENRY H. PAULSEN,
FRANK J. EDWARDS.