

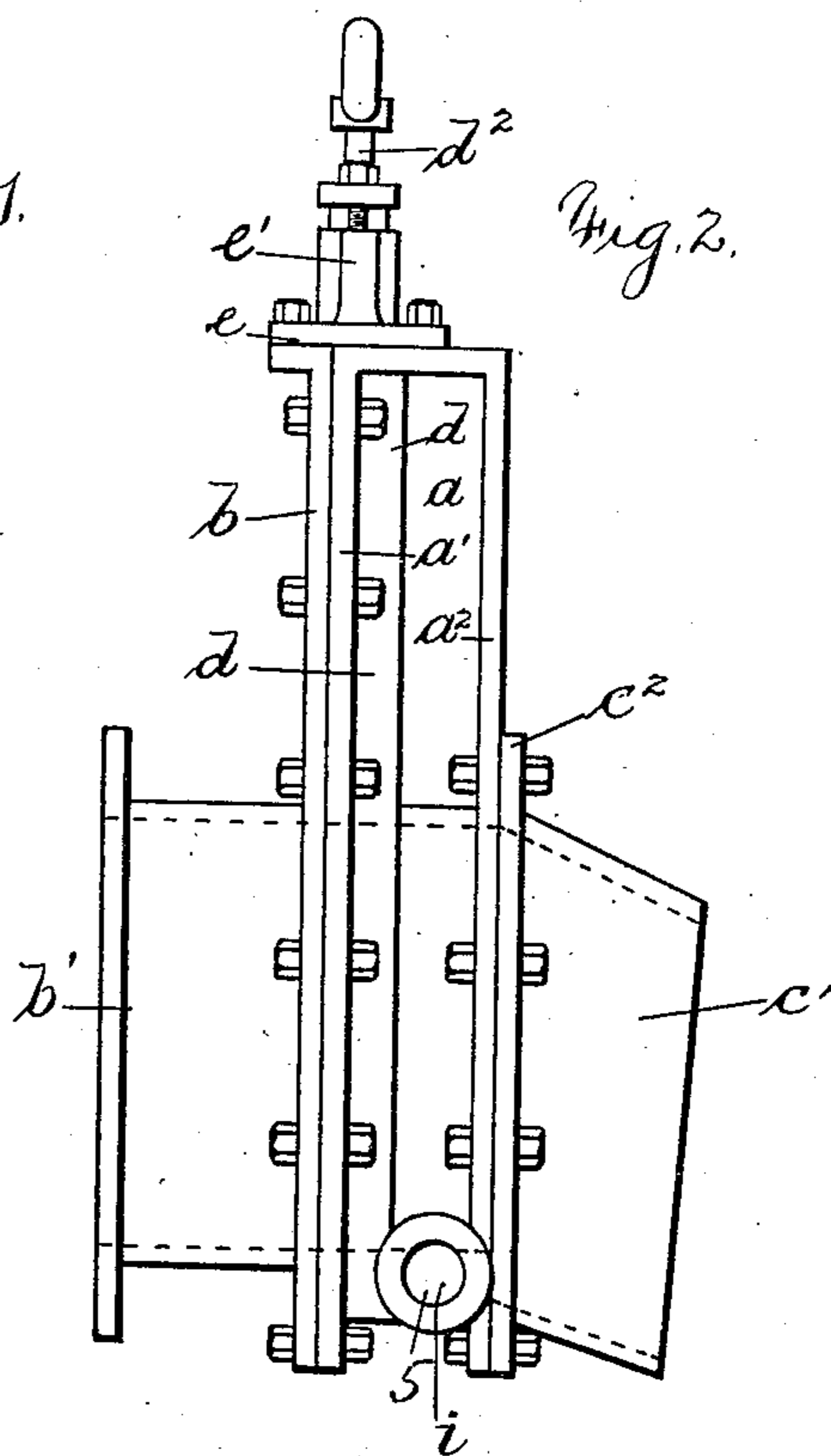
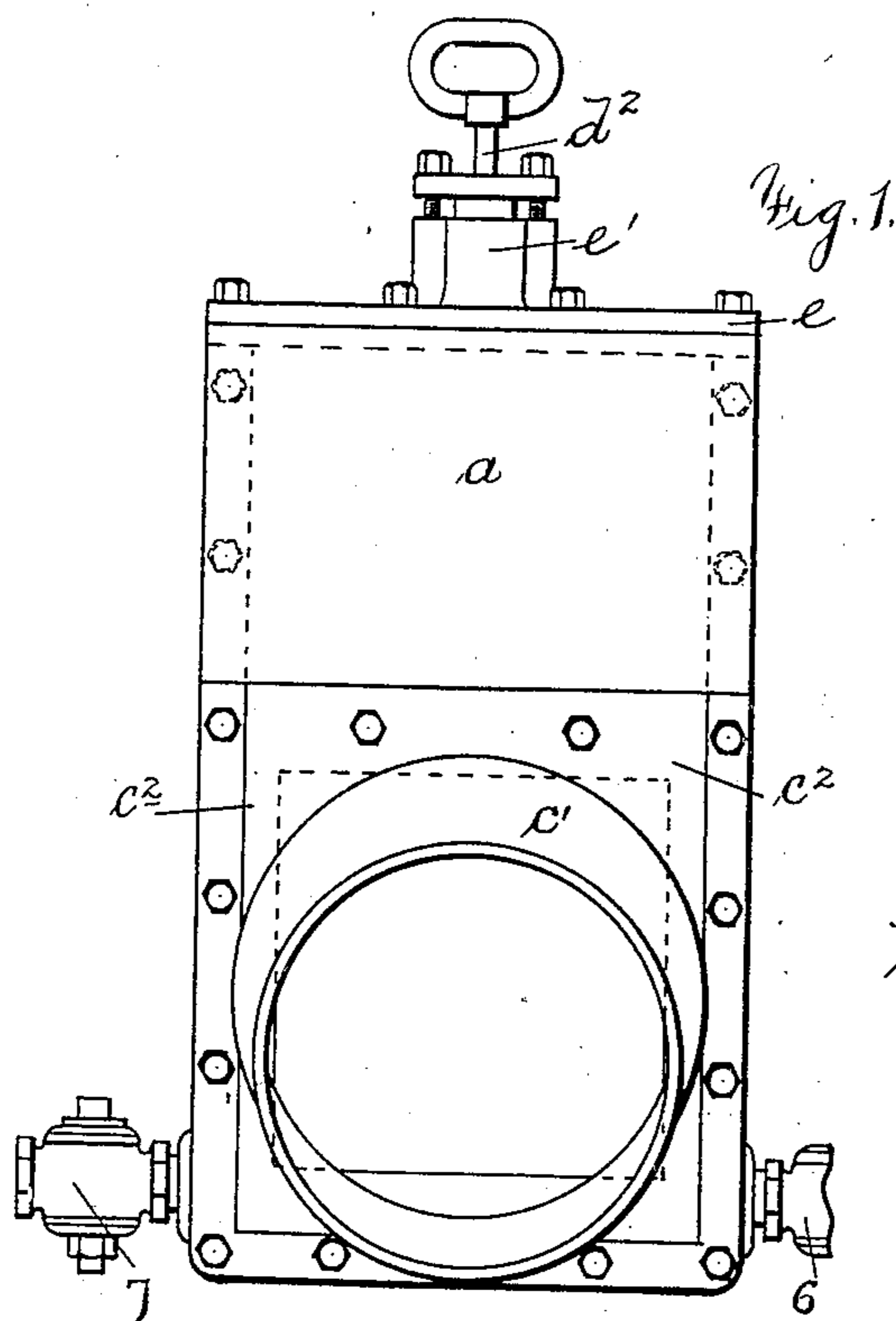
No. 829,755.

PATENTED AUG. 28, 1906.

J. H. BAKER, G. F. SHEVLIN & F. H. BAKER.
GATE VALVE.

APPLICATION FILED JUNE 10, 1905.

2 SHEETS—SHEET 1.



WITNESSES
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Frederick H. Baker
PER *Harold Berrell*
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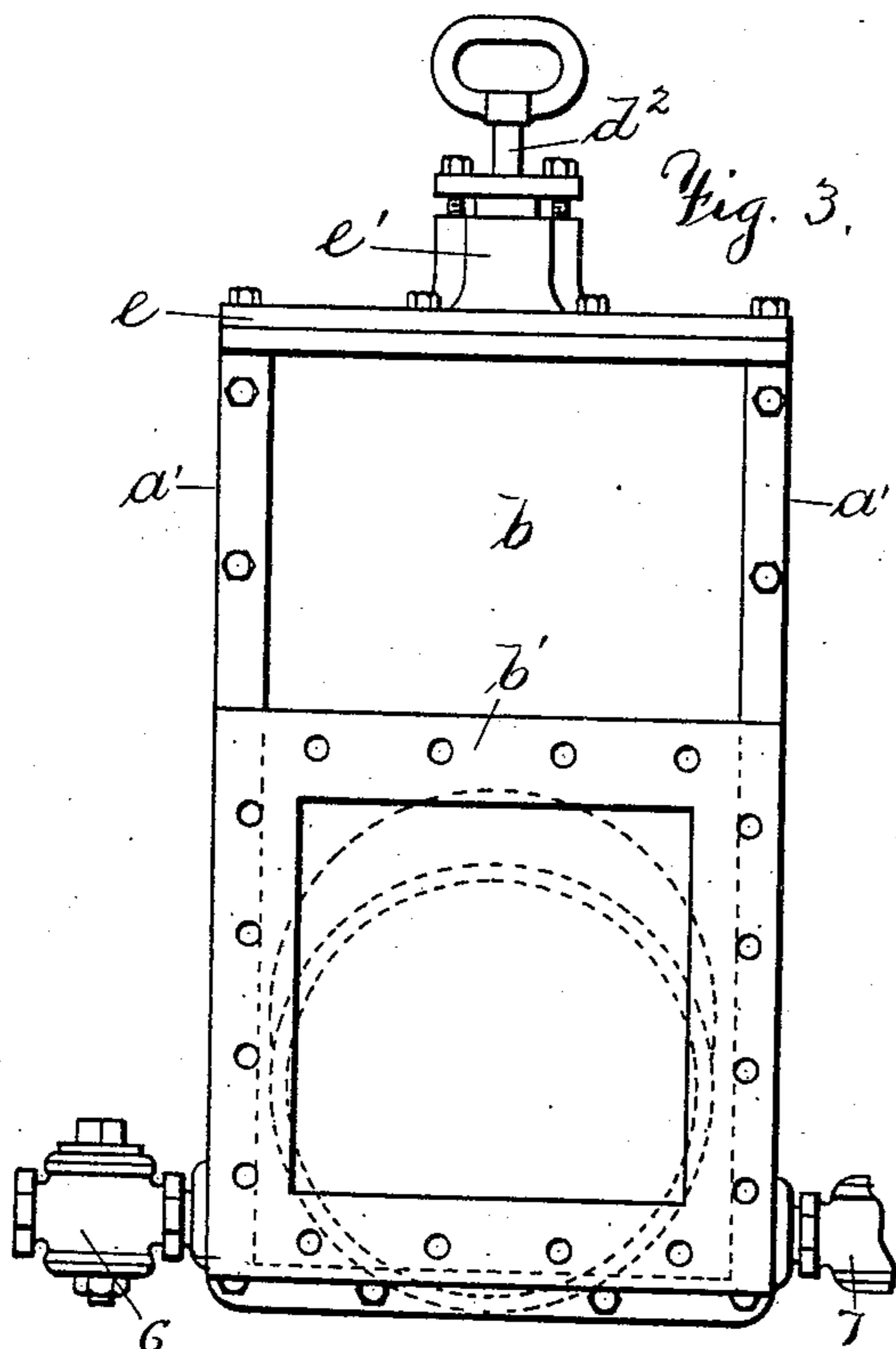


Fig. 3.

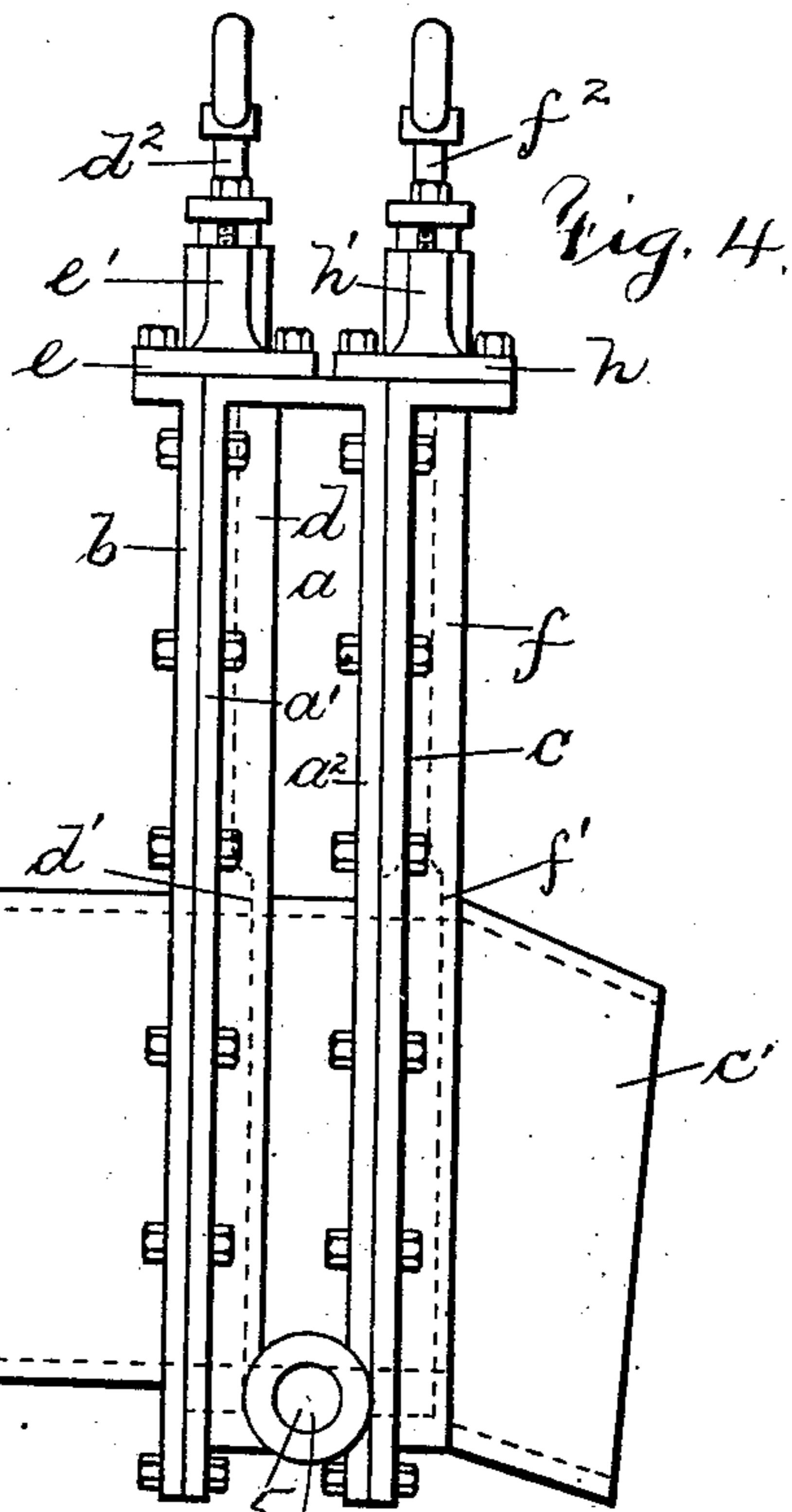


Fig. 4.

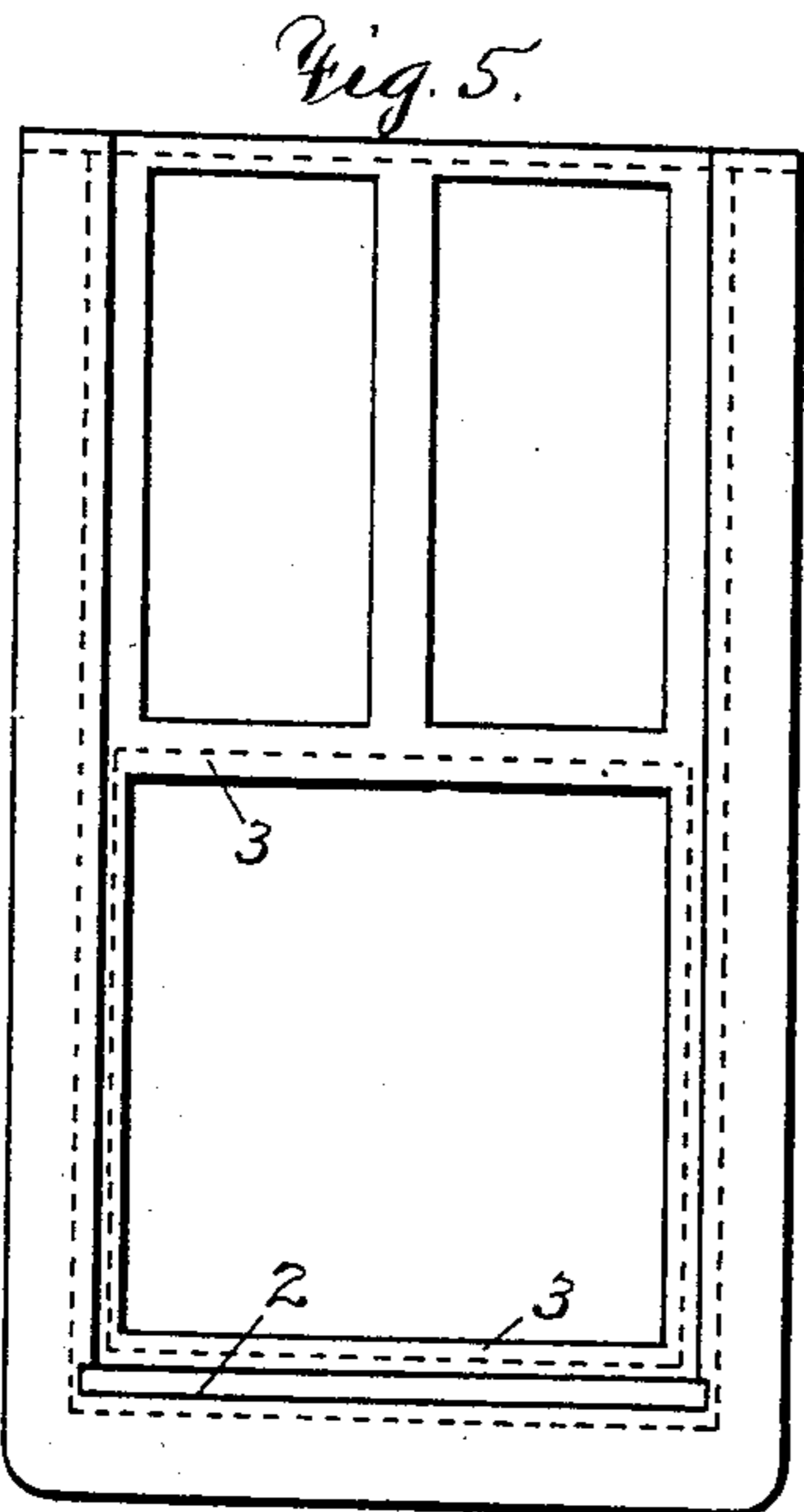


Fig. 5.

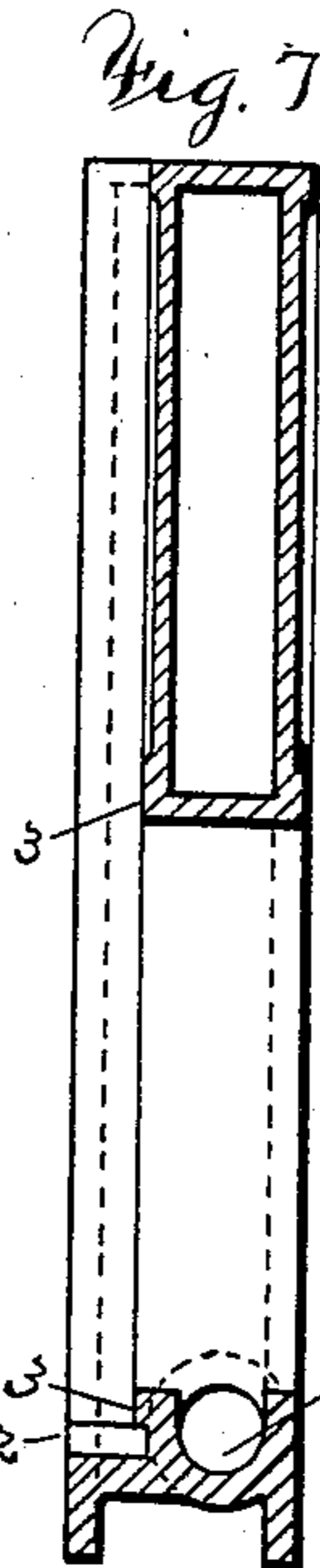


Fig. 7.

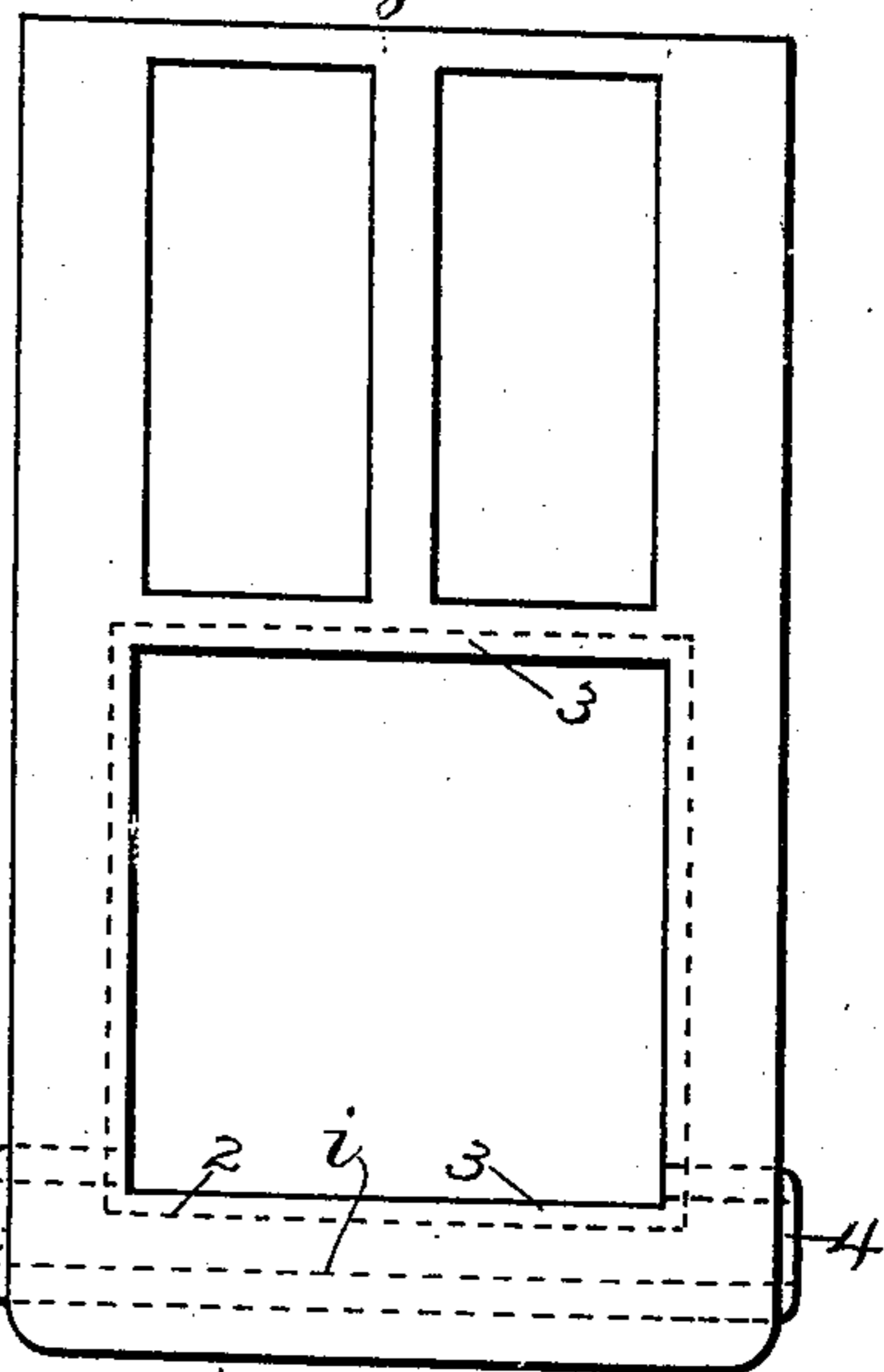


Fig. 6.

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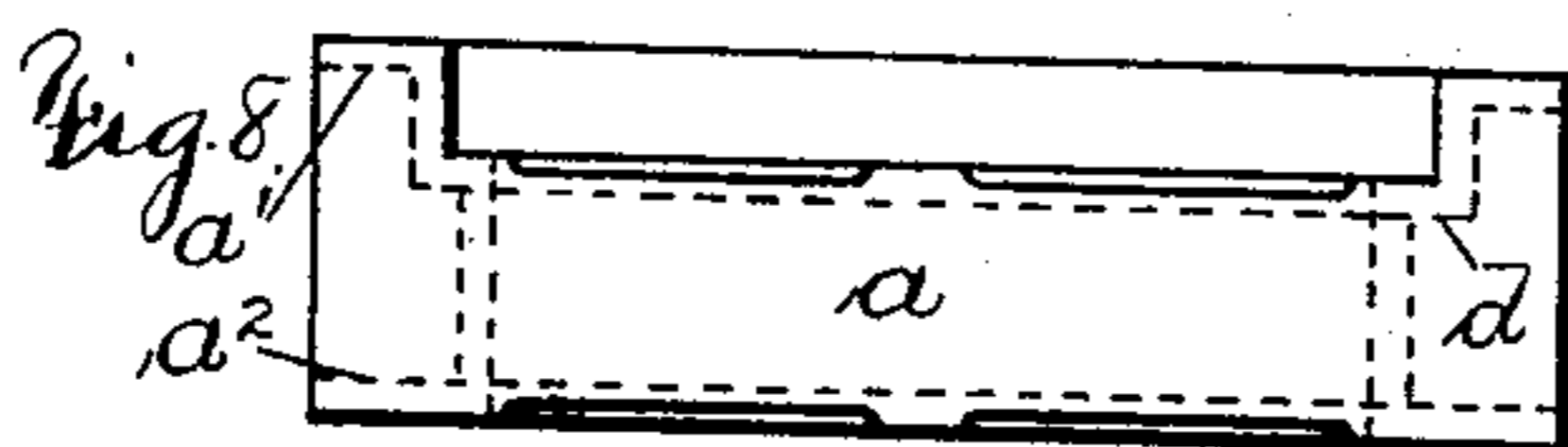


Fig. 8.

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UNITED STATES PATENT OFFICE.

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GATE-VALVE.

No. 829,755.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed June 10, 1905. Serial No. 264,681.

To all whom it may concern.

Be it known that we, JAMES H. BAKER, GEORGE F. SHEVLIN, and FREDERICK H. BAKER, citizens of the United States, residing at Saratoga Springs, in the county of Saratoga and State of New York, have invented an Improvement in Gate-Valves, of which the following is a specification.

In sulfite-pulp mills the sulfite-pulp is discharged from the digesters into the blow-pits, and it carries with it a large percentage of sulfuric acid. This acid usually leaks past the closed gate of the valve on the blow-pits or stuff-chests and runs on into the line of piping and into the pumps and therein said acid eats into the metal of the pipes and pumps and causes an expensive and unnecessary wasting away and weakening of the same, besides destroying their useful life; and the object of our invention is to overcome this difficulty.

Our invention relates to the gate-valve placed on the blow-pit or stuff-chests and which is in the line of pipes between the same and the pumps. This gate-valve may be single or double and when constructed according to our invention comprises means for trapping that part of the acid which leaks past the gate when closed and diverting the same from the piping and pumps.

In carrying out our invention we preferably employ a valve comprising a body portion, a flange provided with an intake-nozzle for one side of said body, a bonnet provided with an outlet-nozzle for the other side of said body, a gate or gates, means for operating the same, a trap in the lower portion of the valve-body adjacent to one gate, and means for opening and closing the passages from said trap.

In the drawings, Figure 1 is a front elevation of the simpler form of our improved gate-valve, and Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation of the preferred form of our invention, and Fig. 4 is a side elevation of the same. Figs. 5 and 6 are views, respectively, of the opposite sides of the valve-body. Fig. 7 is a central vertical section of the valve-body, and Fig. 8 is a plan of the same.

Similar reference characters denote similar parts in the respective figures.

a designates the valve-body, which is pro-

vided with suitable flanges *a'* *a*², to which are secured, respectively, the front flange *b* and the bonnet *c*. The flange *b* is provided with an inlet-nozzle *b'*, adapted to be connected to a blow-pit or stuff-chest, and the bonnet *c* is provided with an outlet-nozzle *c'*, preferably circular and adapted to be connected to the piping leading to the pumps. In the valve-body there is a gateway *d*, adapted to receive the gate *d'*, operated by the gate-stem *d*², which passes through the cover *e* and stuffing-box *e'*, and when the valve is closed the gate *d'* rests on the face 2, extending across the lower portion of the opening in the valve-body and against its seat 3, surrounding the said opening in the valve-body.

As indicated in Fig. 4, the bonnet *c* is preferably provided with a gateway *f*, in which a gate *f'* is operated by the stem *f*², passing through the cover *h* and stuffing *h'*.

In the lower part of the valve-body and at the bottom of the opening therein we provide a trap or recessed portion *i* intermediate of the gates and extending across the entire valve-body and terminating in openings 4 5 in the valve-body, and which openings may be interiorly screw-threaded and fitted with cocks or auxiliary valves 6 7, respectively.

In the use of our improved valve the cocks 6 and 7 are closed when the gates *d'* *f'* are open and the cocks 6 and 7 open when the valve-gates are closed, whence it will be apparent that any and all acid which may leak by the gate *d'* when closed will descend to the trap *i* and from there be conveyed away to a waste or suitable receptacle, and thus be diverted from the pumps and piping leading thereto.

It will also be understood that while we have shown and prefer to employ the double-gate construction we do not limit ourselves to this, structure as it is manifestly within the nature and spirit of our invention to dispense with the gate *f'* and employing instead of the bonnet *c* a face or rear flange *c*², merely provided with an outlet-nozzle *c'* to be connected to the piping leading to the pumps.

We claim as our invention—

1. A gate-valve comprising a body portion, an inlet-nozzle thereon, a gate in said body portion and means in said body portion at the side of the said gate opposite the inlet-nozzle and at the other side of the seat for the

said gate for trapping and conveying away that part of the liquid which leaks by the said gate.

2. A gate-valve comprising a body portion, 5 an inlet-nozzle thereon, a gate, a seat in the said body portion for the said gate and a trap also in the said body portion at the side of the said gate opposite the inlet-nozzle and on the other side of the said seat for trapping and 10 conveying away that part of the liquid which leaks by the gate when closed.

3. A gate-valve comprising a body portion independently operated, gates therein, means 15 for operating said gates, and means intermediate of said gates for trapping and conveying away that part of a liquid which leaks by the gate on the inlet side.

4. A gate-valve comprising a body portion having an opening and gateway therein, a 20 cover, a flange secured to one face of the body portion, a bonnet secured to the other face of said body portion and provided with a gateway, gates located respectively in the gateways in said body portion and bonnet, stems 25 for said gates, and means intermediate of said gates for trapping and conveying away that part of a liquid which leaks by the inlet-gate.

5. A gate-valve comprising a body portion 30 having an opening and gateway therein, a cover, a flange secured to one face of the body portion, a bonnet secured to the other face of said body portion and provided with a gateway, an inlet-nozzle on said flange, an outlet- 35 nozzle on said bonnet, gates located respectively in the gateways in said body portion

and bonnet, stems for said gates, and means intermediate of said gates for trapping and conveying away that part of a liquid which 40 leaks by the inlet-gate.

6. A gate-valve comprising a body portion having an opening and gateway therein, a 45 cover, a flange secured to one face of the body portion, a bonnet secured to the other face of said body portion and provided with a gateway, an inlet-nozzle on said flange, an outlet- nozzle on said bonnet, gates located respec- 50 tively in the gateways in said body portion and bonnet, stems for said gates, a trap extending across said body portion intermediate of said gates, and means for opening and closing the outlets from said trap.

7. A gate-valve comprising a body portion having an opening and gateway therein, a 55 cover, a flange secured to one face of the body portion, a bonnet secured to the other face of said body portion and provided with a gateway, an inlet-nozzle on said flange, an outlet- nozzle on said bonnet, gates located respec- 60 tively in the gateways in said body portion and bonnet, stems for said gates, a trap extending across said body portion intermediate of said gates, and cocks secured in the outlets of said trap for opening and closing the same.

Signed by us this 24th day of May, 1905.

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Witnesses:

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