

No. 685,496.

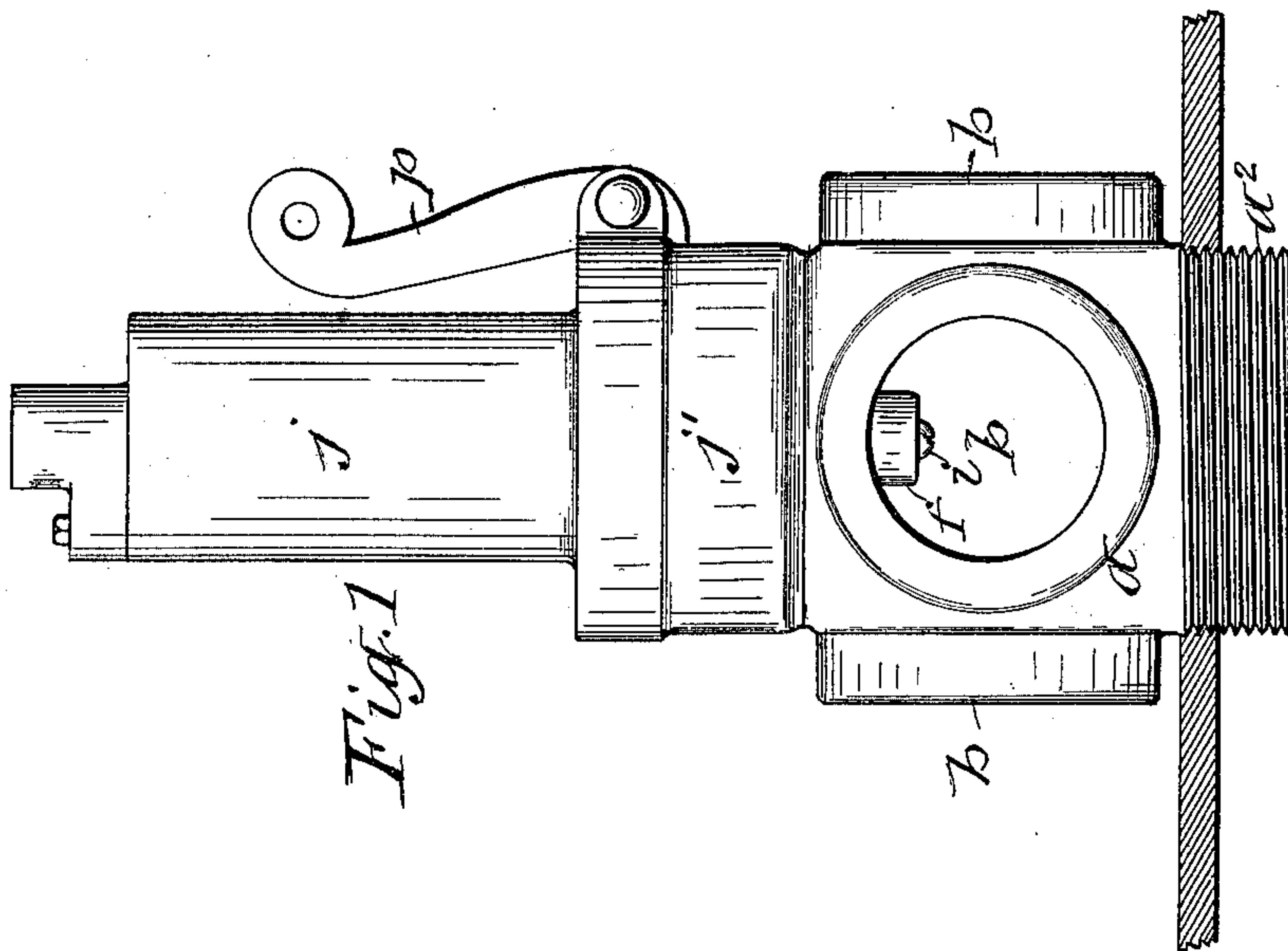
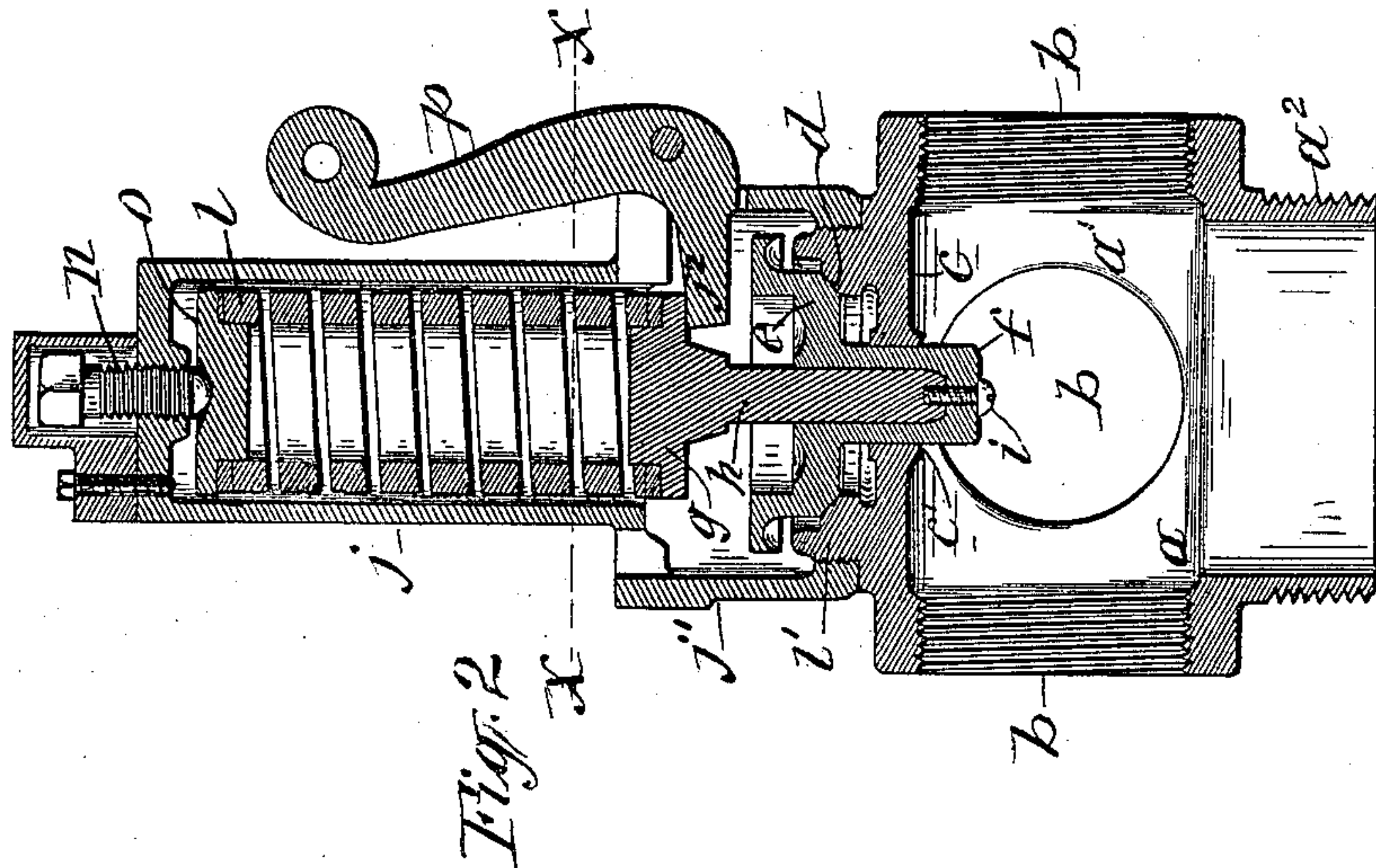
Patented Oct. 29, 1901.

J. J. TONKIN.
SAFETY VALVE.

(Application filed Dec. 29, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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H. H. Meier Jr.

INVENTOR

John J. Tonkin
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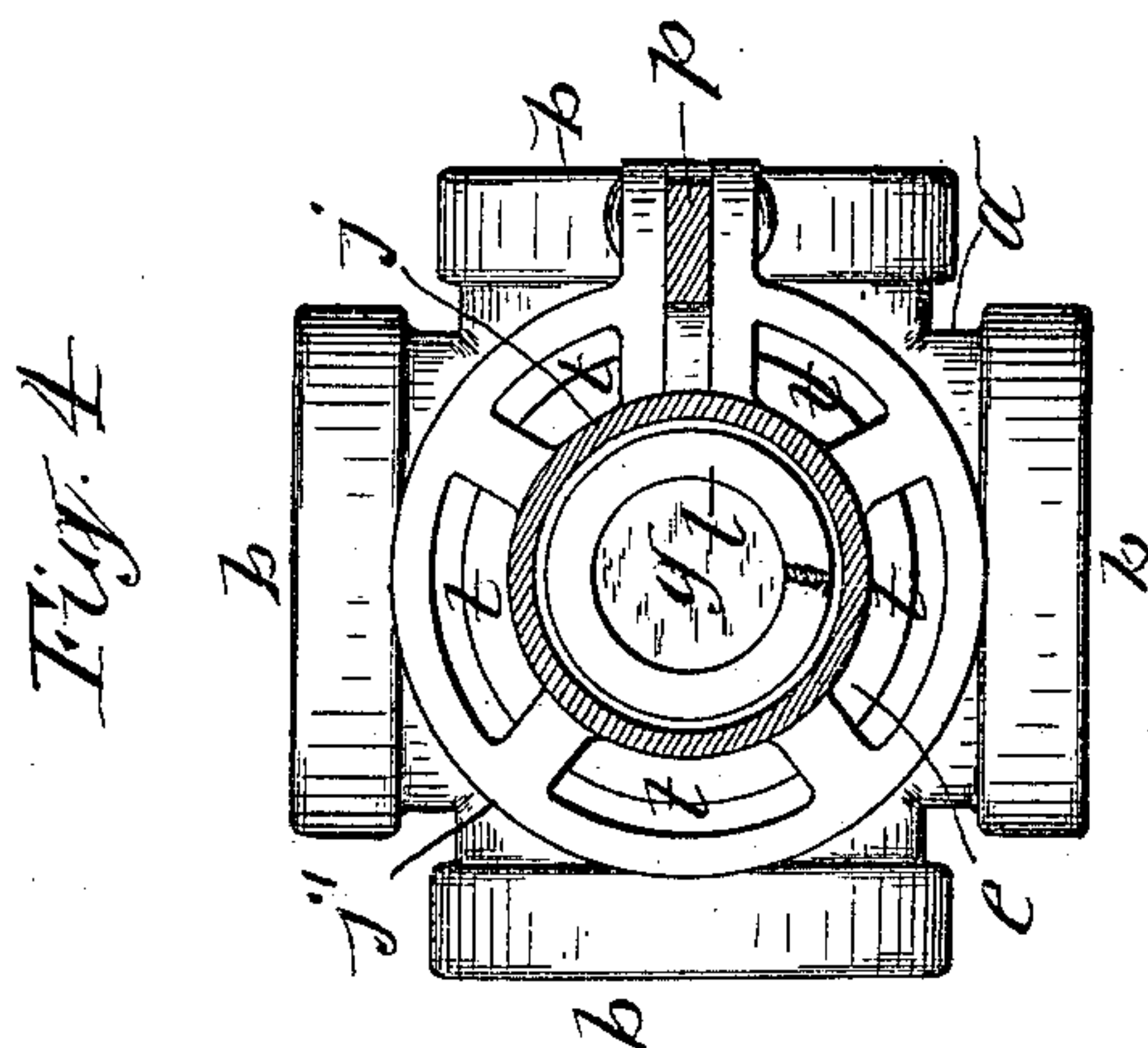
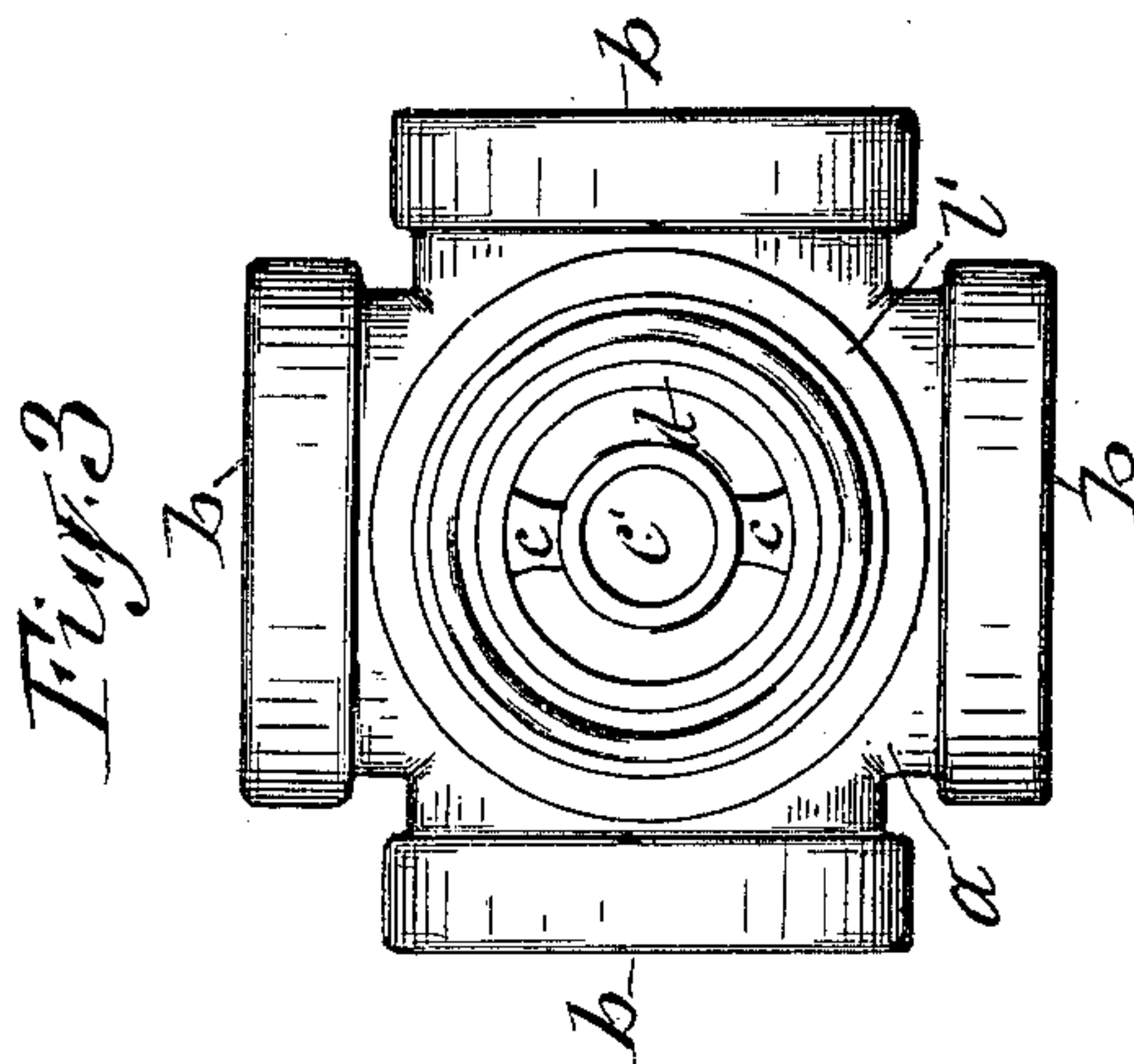
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WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN J. TONKIN, OF OSWEGO, NEW YORK.

SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 685,496, dated October 29, 1901.

Application filed December 29, 1900. Serial No. 41,448. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. TONKIN, a citizen of the United States, and a resident of Oswego, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Safety-Valves, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the species of safety-valve shown in Letters Patent No. 304,271, dated August 26, 1884.

The object of the invention is to adapt the safety-valve to be attached either directly to a steam-boiler or to the end of a horizontal pipe leading from the boiler or from any other apparatus charged with substances under heavy pressure; and the further object of the invention is to provide simple and efficient means for enabling the engineer to force the valve from its seat, and thereby prevent accidental locking of the valve in its closed position; and to that end the invention consists in the improved construction and combination of parts hereinafter described, and set forth in the claim.

In the annexed drawings, Figure 1 is a side view of a safety-valve embodying my improvements. Fig. 2 is a vertical transverse section of the same. Fig. 3 is a detached plan view of the base of the safety-valve minus the valve proper, and Fig. 4 is a horizontal transverse section on line X X in Fig. 2.

Similar letters of reference indicate corresponding parts.

a denotes the base of the safety-valve. Said base is formed with a central chamber a' and with the externally-screw-threaded rim a^2 on its bottom to allow it to be attached directly to the top of a boiler by screwing said rim into a screw-threaded orifice in the boiler-shell.

To adapt the safety-valve to be connected to the end of a horizontal pipe receiving steam or other substance under pressure, I provide the sides of the base a with a plurality of separate inlets $b b b b$, communicating with the chamber a' , and each screw threaded or otherwise provided with means for attaching it to the screw-threaded end of the

pipe. Above the side inlets is a bridge c , extending across the top of the chamber a' and provided with an orifice c' in its center. Above the said bridge is the valve-seat d , which is preferably beveled from the top inward, as shown in Fig. 2 of the drawings.

e represents the valve, consisting of an annular plate which is beveled to correspond to the valve-seat. The center of this plate is formed with a downwardly-extending tubular guide f , which passes through the central orifice c' of the aforesaid bridge. Said guide is fitted closely to the orifice to retain the valve e in parallelism with the valve-seat d .

g represents the spring-pressed plate, which is formed with a downwardly-extending stem h , seated in and fitted closely to the interior of the tubular guide f and firmly secured thereto by any suitable means, such as a screw i , passing through the bottom of the guide f and engaging a socket in the bottom of the stem h . By thus fastening said stem in the tubular guide the engineer is enabled to force the valve from its seat by operating the lever p , which lifts the spring-pressed plate g and causes the valve to be lifted with it by the fastening i of the stem h to the tubular guide f of the valve. Hence the liability of the valve becoming accidentally and permanently locked in its closed position is obviated.

l denotes the spiral spring, which is seated upon the plate g and is housed in the case j , the lower portion of which is formed with an enlargement j' , inclosing the valve and its seat. The lower end of this enlargement is screw-threaded and secured to a correspondingly-screw-threaded rim l' on the top of the base a .

n represents a screw which passes through a screw-threaded eye in the center of the top of the case j and bears on the top of a plate o , mounted on the upper end of the spring l . By means of the screw n the tension of the spring can be adjusted to exert a greater or less resistance to the upward movement of the lower plate g , which by its before-described connection with the valve e exerts a corresponding resistance to the movement of the valve e .

The top of the enlargement j' is provided

with ports $t t$ for the escape of the steam or other substance under pressure forcing the valve from its seat.

p denotes a lever which is pivoted to ears 5 on the case enlargement j' and is formed with an inwardly-extending arm j^2 , engaging the under side of the spring-pressed plate g . By means of said lever the person in charge of the boiler can lift the plate g , and thus relieve 10 the valve from the pressure of the spring l when desired.

I claim—

In a safety-valve, the combination of a base formed with a central chamber and with 15 a plurality of steam-inlets in the walls of

said chamber, a bridge extending across the chamber above said inlets and provided with a central orifice and the valve-seat formed on the chamber above the bridge, the valve provided with a downwardly-extending tubu- 20 lar guide passing through the aforesaid orifice, the spring-pressed plate provided with a stem inserted into said guide and fastened thereto, and a manually-operated lever lifting the spring-pressed plate and causing it to 25 force the valve from its seat as set forth.

JOHN J. TONKIN. [L. S.]

Witnesses:

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