

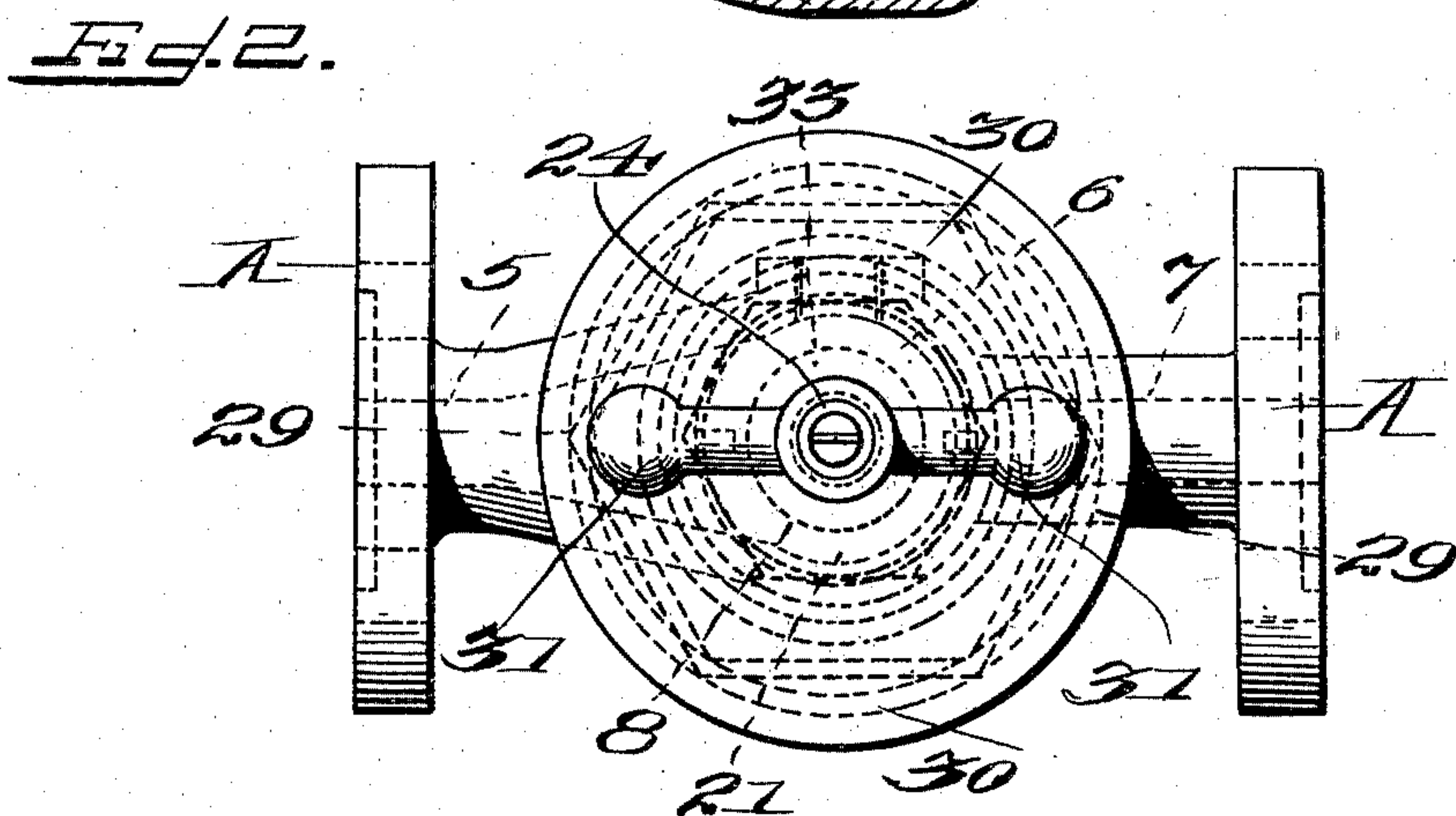
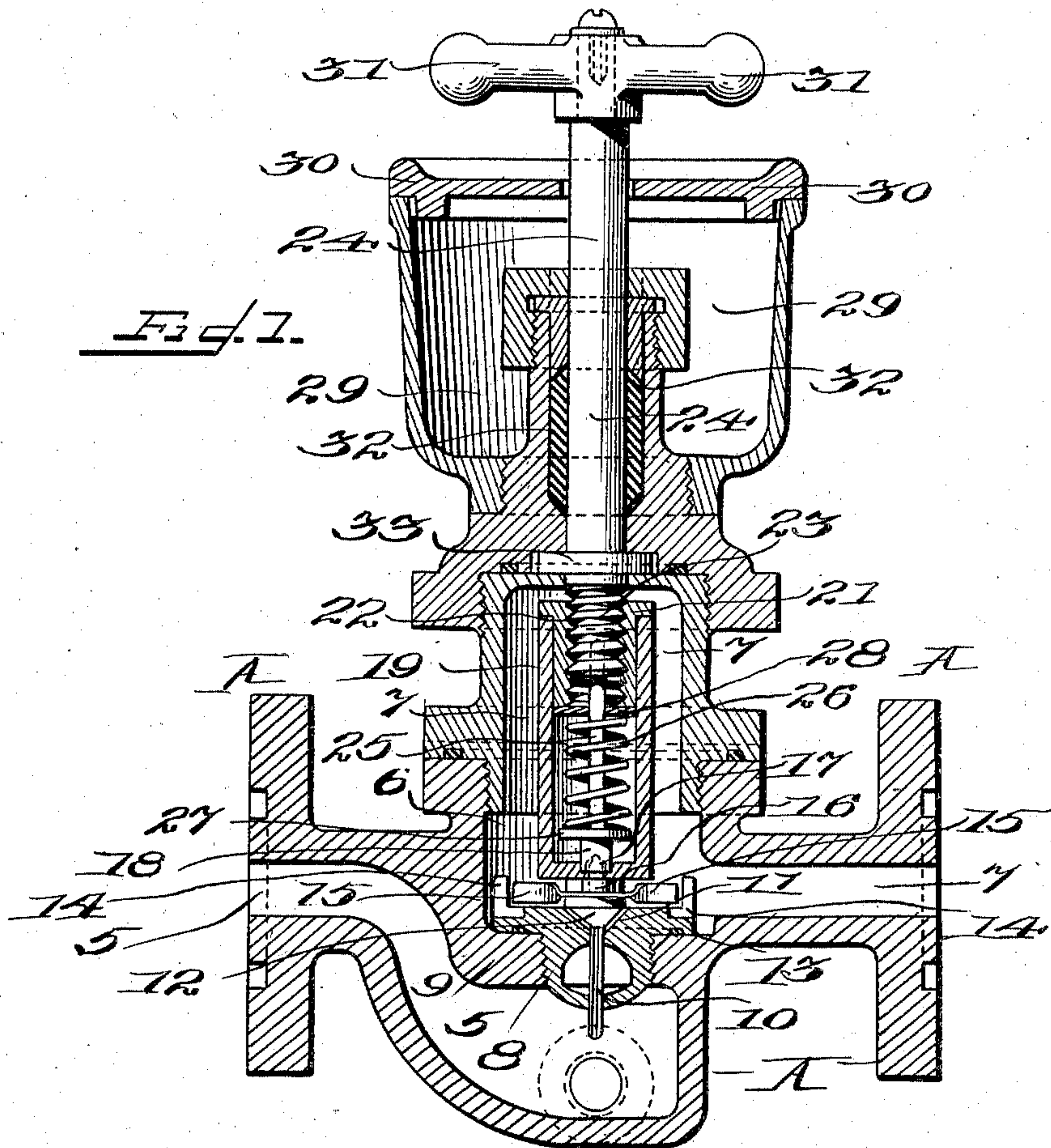
C. C. PALMER.
VALVE.

APPLICATION FILED JUNE 8, 1906.

967,659.

Patented Aug. 16, 1910.

2 SHEETS—SHEET 1.



Witnesses
R. W. Cusby
R. B. Cavanagh

Inventor
Cassius Clay Palmer
By his Attorneys
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C. C. PALMER.

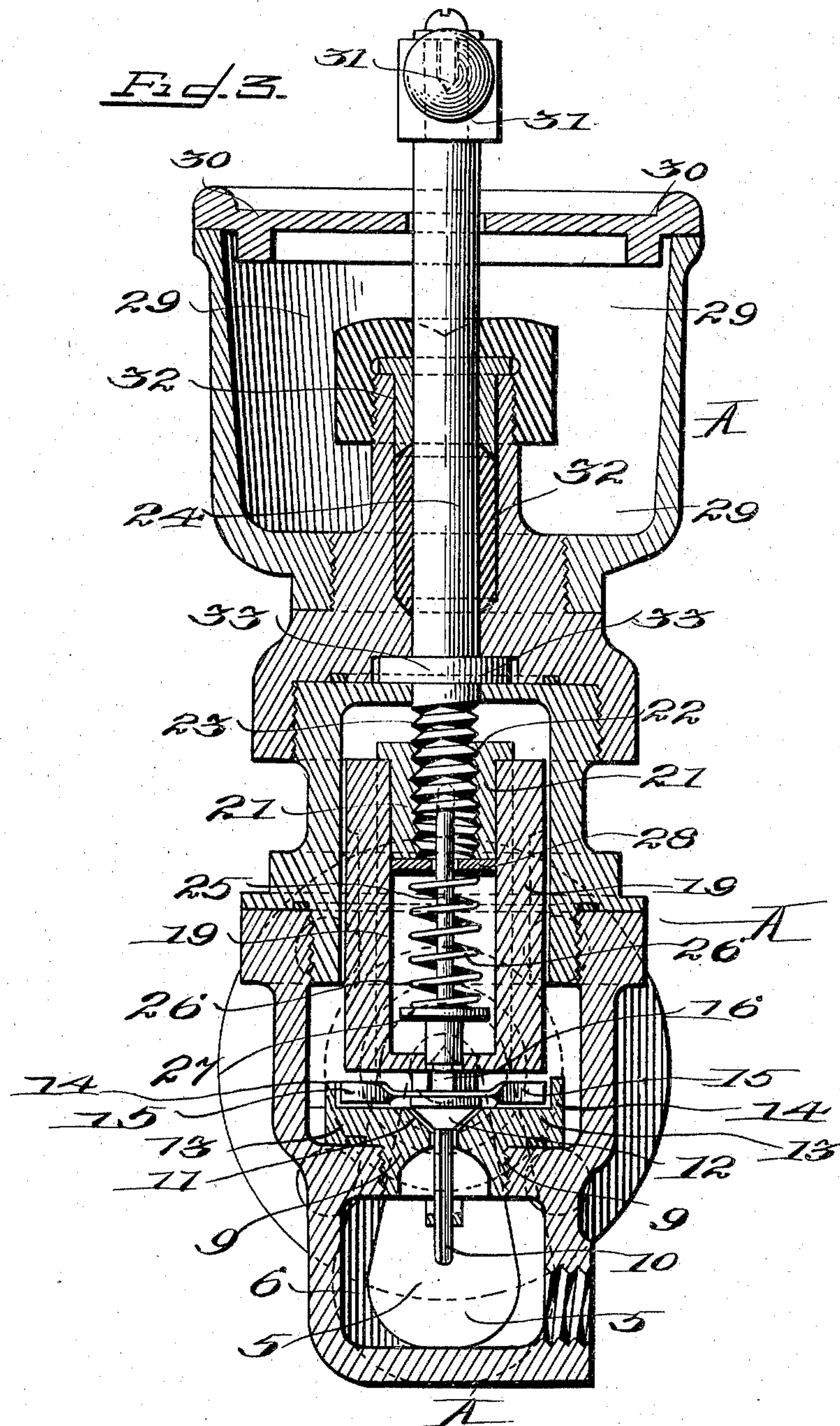
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Witnesses
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UNITED STATES PATENT OFFICE.

CASSIUS CLAY PALMER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
THE RAILWAY AND STATIONARY REFRIGERATING COMPANY, OF NEW YORK,
N. Y., A CORPORATION OF MAINE.

VALVE.

967,659.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed June 8, 1906. Serial No. 320,685.

To all whom it may concern:

Be it known that I, CASSIUS CLAY PALMER, a citizen of the United States, and a resident of New York city, borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My present invention relates to certain novel and useful improvements in valves and has particular application to a feed valve which will be found very desirable and convenient when used in connection with refrigerating apparatus for controlling the passage of the refrigerating agent.

In the present instance I have particularly in view so constructing and arranging the valve that the opening therethrough will at all times be kept free and clean from grit and of similar obstructions, so that the flow of the fluid therethrough will be unimpeded.

With this and other ends of a similar nature in view my invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claims.

In the accompanying drawings wherein I have shown a preferred embodiment of my invention, like characters of reference indicate like parts in all the views, and Figure 1 is a vertical, longitudinal sectional view taken through a valve embodying my improvement, the valve stem and the handle therefor being shown in elevation; Fig. 2 is a top plan view of the same; Fig. 3 is a transverse, vertical sectional view of the valve.

Referring now to the accompanying drawings in detail, A indicates the valve body as a whole, said valve having the inlet passage 5, communicating with the chamber 6 and an outlet passage 7 also communicating with such chamber, the latter being formed practically integral with the hub chamber 7. To control the passageway between the inlet and outlet I provide a valve seat 8 threaded into the opening of the valve diaphragm 9, said seat having a passage for the fluid and the grooved valve stem 10 and a conical depression 11 in which is adapted to seat the head 12 of the valve.

One of the disadvantages incident to valves heretofore used in refrigerating ap-

paratus has been that the passageway between the inlet and outlet which is controlled by the valve is liable to become clogged or choked with grit or other small particles, thereby interfering with the proper operation of the valve. To overcome this objection I have constructed my valve as herein set forth, a preferred feature being as follows: The body of the valve seat 8 at the point above the diaphragm is enlarged as at 13 and provided with a vertical flange 14. The valve head 12 carries a propelling device formed of blades 15 clamped to the valve head by the jam nut 16. By the use of the flange 14 the fluid passing up alongside of the fluted stem 10 (as will hereafter be more fully described) is forced to act directly on the blades 15 before escaping from the outlet, thereby insuring the rotation of said blades, and a consequent rotary movement of the valve head. The valve member is provided with a conical stud 17 finding bearing in the cone socket 18. This latter, as will be observed by reference to Figs. 1 and 3, lies within the housing 19 within the hub chamber 7. This housing carries at its upper end the sleeve nut 21 provided with a threaded bore 22 to permit the passage of the threaded portion 23 of the valve spindle 24. This threaded portion is in turn formed with a vertical bore into which extends the upper end portion of the spring spindle 25. An expansion spring 26 is coiled about the spring spindle 25 and bears at its lower end against the flange 27 of the socket 17 while the upper end of such spring finds bearing against the washer 28. The upper portion of the valve is of any suitable construction and preferably provided with a glycerin cup 29 having a cover 30.

31 is a handle for the main spindle of the valve which spindle extends through the usual stuffing box 32. The main spindle is designed to be rotated by means of this handle but such spindle is held against vertical movement by the collar 33. The lower end portion 23 of the spindle is provided with right hand threads so that upon the revolution of the spindle the sleeve 21 and its housing will be moved upward or downward according to the direction of the rotation of the handle to adjust the tension of the spring 25 by compressing the same or releasing the pressure therefrom.

From the above description taken in connection with the drawings the construction and operation of my valve will be readily understood. The fluid flowing in through the passage 5 and passing up alongside the fluted stem 10 of the rotating valve member exerts pressure against the under side of the same and lifts the conical head 12 from its seat. The continued passage of the fluid striking the wings or blades 15 of the propeller imparts to the valve head a rotary movement so that the valve continually spins or turns and any grit, or small particles which might choke and impede the movement of the valve, are ground out and the passageway between the inlet and the outlet is always free, so that the vertical movement of the valve from its seat is unobstructed. By turning the main valve spindle as before described the spring spindle carrying the socket 17 may be adjusted so that the upper bearing of the rotating valve may be adjusted as necessary.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A valve, comprising a casing having an inlet and an outlet, a controlling valve, comprising a valve seat and valve member therefor, interposed between and in a horizontal plane with the inlet and outlet, a vertical flange extending from the top of the flange seat adjacent the edge thereof, and means, operating within the top of said valve seat, carried by said valve member to rotate the latter under the pressure of the fluid passing from the inlet to the outlet.

2. A valve comprising a casing having an inlet and an outlet, a valve seat located between and in a horizontal plane with the inlet and outlet, a valve therefor, an upwardly projecting flange around the top of said valve seat, a propelling device inside of said flange, attached to said valve, and acted upon by the pressure of the fluid passing from the inlet to the outlet for rotating said valve to clear the seat.

3. A valve comprising a casing having an inlet and an outlet, a controlling valve located between the inlet and the outlet adapted to be rotated by the passage of the

fluid therethrough, a main valve spindle extending through the casing and provided at its lower end with a bore, and means comprising a socket bearing spindle having its upper end resting in the bore in the main valve spindle and a tension spring therefor operated by the movement of the main valve spindle for limiting the movement of the valve from the seat.

4. A valve comprising a casing having an inlet and outlet therefor, a seat located in the diaphragm between the inlet and outlet, a valve member for the seat, means carried thereby located within a vertical flange on said seat and subject to pressure of the fluid passing therethrough for rotating the valve, and adjustable tension means located above the valve for limiting the upward movement of such valve.

5. A valve having an inlet and an outlet, a valve seat located in the diaphragm between the inlet and outlet, a flange surrounding said valve seat, a valve body cooperating with the seat and a stud projecting from the top of said valve body, blades projecting from said valve body and adapted to be subjected to the pressure of fluid passing through the valve to turn the latter, a main valve spindle, a housing carried thereby, a spindle within the housing provided with a socket adapted to receive the stud on the valve body, said last-mentioned spindle projecting into a bore formed in the valve stem, and a spring tensioning the socket bearing spindle.

6. A valve, comprising a casing, an inlet and an outlet, a controlling valve located between the inlet and outlet adapted to be rotated by the passage of the fluid therethrough, a valve spindle extending through the casing, and a bearing and tension spring therefor operated by the valve spindle for limiting the movement of the valve from the seat.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

CASSIUS CLAY PALMER.

Witnesses:

R. B. CAVANAGH,
JOS. J. PIERANDO.