(No Model.)

F. W. SEAVER.

VALVE.

No. 397,757. Patented Feb. 12, 1889.

Fig. 1

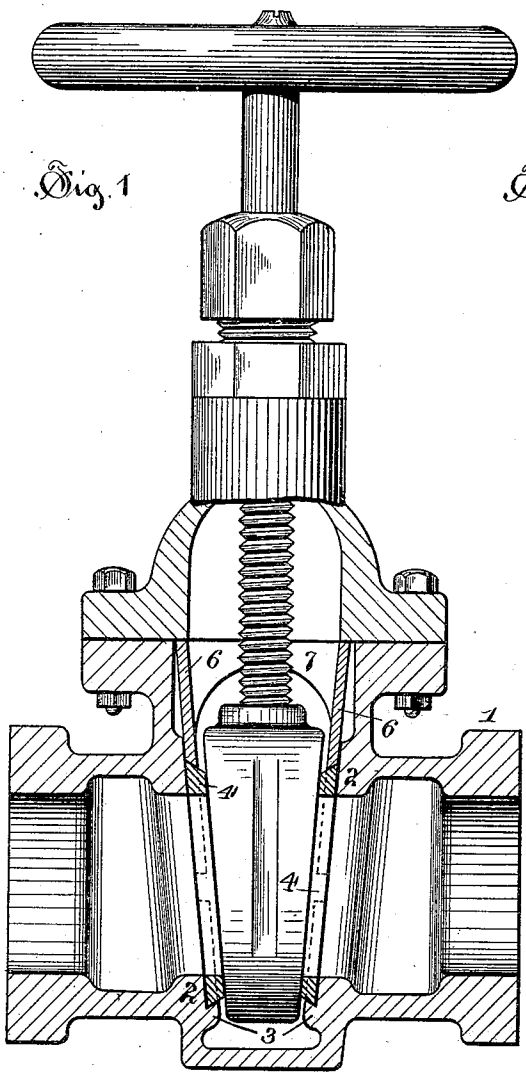


Fig. 2

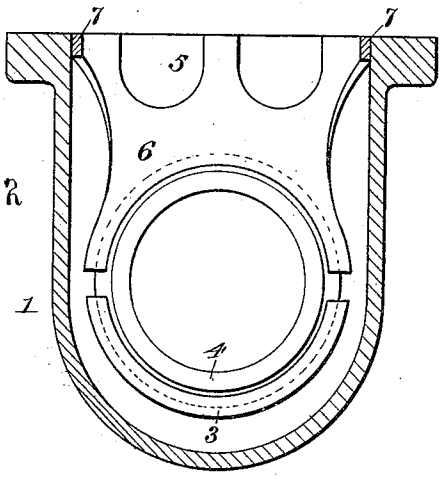
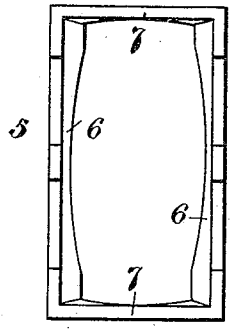


Fig. 3



Witnesses:

Allie S. Williams.

Albert W. Roberts

Inventor,

Frank W. Seaver, by

Harry R. Williams.

Atty.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

FRANK W. SEAVER, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE PRATT & CADY COMPANY, OF SAME PLACE.

VALVE.

SPECIFICATION forming part of Letters Patent No. 397,757, dated February 12, 1889.

Application filed August 23, 1888. Serial No. 283,591. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. SEAVER, of Hartford, Hartford county, Connecticut, a citizen of the United States, have invented certain new and useful Improvements in Valves, of which the following is a full, clear, and exact specification.

My invention relates to the class of straight-way gate-valves, and the object of the invention is to provide a renewable seat-valve of this class within which the valve-seat may be easily and quickly renewed if the valve leaks, and which will be simple and cheap in construction; and the invention consists in a valve the opening in which is provided with inclined seat-faces around the port-openings, and having an outwardly-projecting rim partly encircling the underneath part of the valve-seats, said rim being grooved so as to hold the lower edge of the valve-seats from being blown inward; and it further consists of such a valve with a seat-holder or frame-work which is adapted to rest upon the upper edges of said seats and hold them down in the grooved rim, as more particularly hereinafter described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a side view of a valve, with part broken away, in central vertical longitudinal section. Fig. 2 is a view in vertical transverse section of the body and seat-holder. Fig. 3 is a plan view of the seat-holder.

In the drawings, 1 denotes the body of the valve, which is of common form and construction, with the inclined seat-faces 2. A rim, 3, is cast on the inside of the body of the valve, around the lower part of the port-openings, and is undercut or grooved, usually when the seat-faces are milled, to support and hold the valve-seats 4 to the seat-faces 2. The valve-seats are rings, preferably formed of asbestus or the like mineral substance compounded with a gum, as rubber, or they may be made of soft metal. The openings through these seats are the size of the port-openings, and their outer edges are formed to loosely fit and set into the groove cut in the rim 3, so that the seats will lie against the inclined seat-faces 2 on the body of the valve.

5 denotes the seat-holder, which is a frame formed of thin metal of a size and shape to set into the opening in the body of the valve, the bottom edges of the sides 6 of which are cut out on a curve to set down upon and, when the bonnet of the valve is in place, hold the seats firmly in place, with their lower edges in the grooves in the rims 3 and their faces against the seat-faces on the body in such manner that they are always in position for the wedge-shaped gate to seat itself against them and make a tight joint. The edges of the frame which hold the upper edges of the seats are cut on a bevel to prevent the rings from being drawn inward when the gate is raised, and, if it is desired, the sides which are joined together by the tie-pieces 7 can be made slightly elastic and formed so as to spring outward. This will firmly hold the seats in place against the seat-faces on the body and prevent dirt from getting between the seats and faces, which would cause the valve to leak.

When a seat becomes worn in my improved valve, the bonnet is removed and the seat-holder lifted out and a new seat substituted for the worn one, and as the rings are of small dimensions and cheap in construction a supply can always be kept on hand. A further advantage resides in the fact that no special fitting is required when the ring is inserted in place, for the reason that the edges of the rings will fit into the groove in the rim, and the seat-holder will set down upon the rings and hold them in place if there should be a slight irregularity in the formation of the edges or if they should not be exactly round, as the edges do not make the joint that is to prevent leakage, while any difference in the angle between the sides of the gate and the seat-faces is compensated by the elasticity of the seats.

I claim as my invention—

1. In the herein-described valve, in combination with the body having plane inclined seat-faces adjacent to each port, grooves cut in the body underneath the seat-faces concentric with the port-openings, seats supported by said grooves, a frame-work loosely placed in the opening in the body with a portion of its lower edge resting upon the upper edges

of the seats and holding them against the body, and the bonnet resting upon the frame-work and holding it down upon the top of the seats, substantially as described.

2. In the herein-described valve, in combination with the body having flat inclined seat-faces adjacent to each port and grooved rims cast integral with the body underneath the seat-faces concentric with the port-openings, seats supported by said grooved rims, a rectangular frame-work with two of its sides resting upon the upper edges of the seats and holding them against the body, and the bonnet resting upon the frame-work and holding the frame-work down upon the top of the seats, substantially as described.

FRANK W. SEAVER.

Witnesses:
HARRY R. WILLIAMS,
ALLIE S. WILLIAMS.