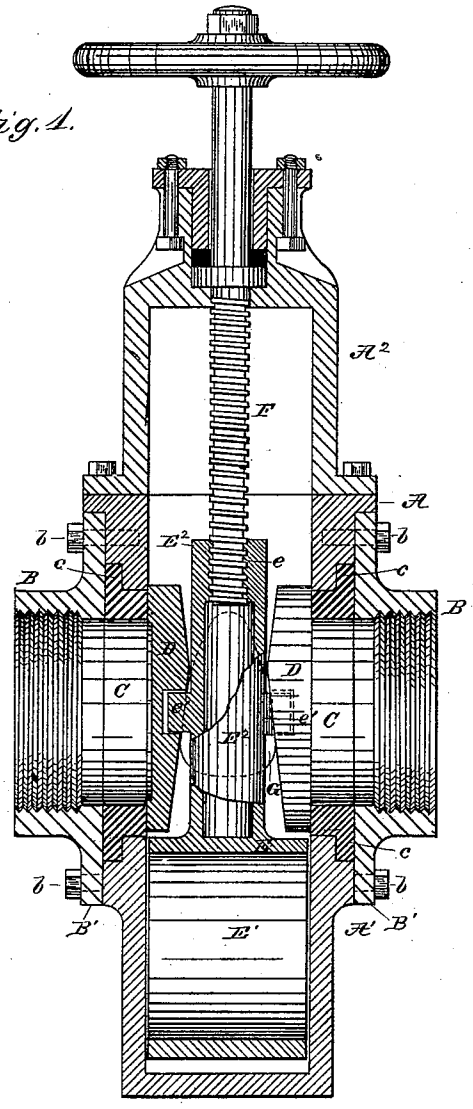
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R. BEAUMONT.

STOP VALVE.

No. 275,798. Patented Apr. 17, 1883.

Fig. 1.



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(No Model.)

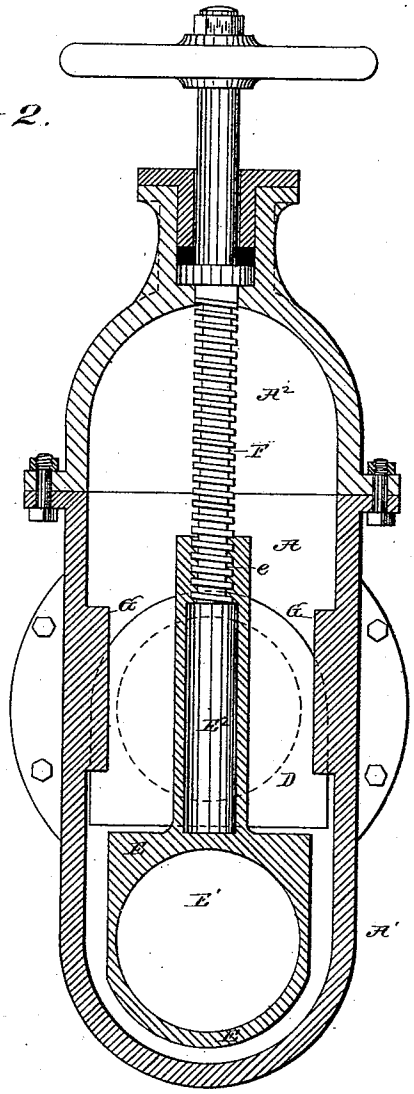
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Fig. 2.



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UNITED STATES PATENT OFFICE.

RICHARD BEAUMONT, OF KANKAKEE, ILLINOIS.

STOP-VALVE.

SPECIFICATION forming part of Letters Patent No. 275,798, dated April 17, 1883.

Application filed May 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, RICHARD BEAUMONT, of Kankakee, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Stop-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in sliding-gate stop-valves, and has for its objects, first, to provide a construction whereby the passage-way through the valve may be made uniform and continuous with that of the adjacent pipes when the valve is opened to its full capacity; second, to provide a connection of one or both of the adjacent pipes with the valve somewhat similar in effect to a "union-joint," as will be explained; and, third, to provide a removable valve-seat, held in place by the detachable bell, and readily removable from the valve for the purpose of refacing or other repairs.

To these ends the invention consists in the several features of construction hereinafter set forth, and pointed out in the claims.

In the drawings I have shown a "double" stop-valve provided with my improvements. Figure 1 is mainly a central vertical section thereof through the axis of the passage, and Fig. 2 is a central vertical section transverse to the passage.

A, A′, and A^2 is the valve-case. B B are removable bells, which, for some purposes of my invention, may be either screw-threaded or adapted to receive the spigot end of pipe-section by a lead, cement, or other similar joint. C C are the removable valve-seats. D D are the valves. E is a tubular extension of the gate, provided with the aperture E′, intended to be raised into line with the adjacent pipes and to afford a passage continuous therewith and of the same diameter when the valve is opened to its full capacity. E^2 is a neck rising from the top of the part E for the reception of the valve-stem F, and provided at its upper end with a threaded portion or nut, *e*, to fit said valve-stem.

In sliding-gate stop-valves as heretofore constructed, the opening of the passage by raising the gate or gates gives lateral enlargement to the passage within the valve-shell. The water or other fluid passing through the gate is diverted in some degree into such lateral spaces, and is thereby materially retarded in its speed. When the valve is not required to be opened to its full capacity, this effect is not objectionable, since to give the discharge required from a connected pipe it is only necessary to open the gate somewhat wider; but when it is desired to obtain the full possible flow through a pipe it is important that the valve connected with said pipe shall give admission or discharge to all the water the pipe is able to carry.

To obviate the fault mentioned in valves as heretofore made, and to give a smooth passage through the valve equal in size to that of the pipe, the gate is provided with the extension E, having the aperture E′ adapted to be brought axially in line with the passage through the shell. The valve-case is adapted to house the extension E of the gate by being prolonged by an extension, A′, at the bottom. A tubular neck, E^2, rises to a sufficient height, as shown, to enable the stem F, terminating above the upper line of the valve-passage, to engage with the nut *e*, and to permit the tube E to be raised into line with said valve-passage.

The valves D are semicircular on their upper edges, but preferably of uniform diameter below their centers, as plainly shown in Fig. 2. They are wedge-shaped in transverse section, or from front to rear, being thinner at the bottom than at their middle and upper portion, at least upon their vertical edges, as seen in Fig. 1, and they extend laterally to engage with the wedge-shaped projections G, (shown in Fig. 2 and in dotted lines in Fig. 1,) cast on the inner surfaces of the central valve-chamber, for the purpose of spreading the valves against their seats when lowered. In this respect the valves do not materially differ from the ordinary construction of loose or spreading valves. Said valves are also carried by the ordinary device of projections *e′ e′* upon the nut of the valve-stem, which projections are in this case located at a suitable point on the nut-tube E^2. The valves therefore work in all respects in the usual manner to rise and fall and to bear outward against their seats when lowered.

The novel feature in the gate consists in the

addition of the tubular part E, adapted to be brought into line with the valve-passage to give uniformity and continuity of said passage through the valve when opened to its full capacity. The effect of this feature of construction is obviously to preserve a smooth passage for the stream through the valve, and to thereby prevent the retardation of the stream which occurs in valves of ordinary construction in consequence of the presence of lateral recesses produced in the valve-chamber when the valve is opened.

The tubular part E may be a short section of pipe, either cast or wrought, and having the nut-tube E^2 affixed thereto, or it may be a special casting of a piece with said tube E^2. Said part E is of the proper width to rise freely between the opposite wedge-lugs G in the sides of the valve-case, and said lugs may serve as guides to direct the part E laterally to place in line with the pipe-passage. The tube E may be arrested at the proper height by contact of the valves D at their top with the inner upper end of the valve-case, or by contact of the end of the stem F with the bottom of the tube E, or by other stop or stops for this purpose.

Referring next to the removable seats C, it will be seen by reference to Fig. 1 that said seats consist each of a metal ring, C, provided with the annular external flange, *c*, fitted to set into a corresponding recess in the external face of the valve-case. Said seats are held in position by the exterior flanged bells, B, which overlie the seat-rings C, and are bolted to the side of the case, as plainly shown. The seats C, being applied from the exterior and held by the simple device of an outer removable bell, are obviously more readily detached from the case for the purpose of repair than they would be if screw-threaded into the shell, as they have heretofore been secured. The bells B, whether threaded to fit the pipe, as shown, or joined thereto by lead, cement, or other form of joint, are readily detachable from the valve-shell by the removal of the bolts *b*, thereby permitting the valve to be taken out of the pipe-line without disturbing any other joints than the flanged joints just mentioned. When the bell B is threaded it operates as a "union-coupling" for the valve and adjacent pipe, being adapted to be first run upon the pipe far enough to admit the valve freely, and then run back against the valve as tightly as may be desired. In this case the bolt-holes in the flange and valve should be equally spaced, so that the flange will connect with the shell at a tenth, eighth, sixth, or greater turn, as may be provided. Suitable packing will be inserted beneath the bell-flanges.

The valve, if "single-gate," or if the seat be otherwise applied, may have one of its bells cast rigid with the shell, in which case the opposite movable bell should be made longer and threaded to run back on the contiguous pipe set far enough away to admit the shell and rigidly-attached bell.

I am of course acquainted with the familiar device for opening and closing a passage consisting of an apertured sliding board or plate arranged contiguous to a similarly-apertured stationary part. I do not, therefore, wish to embrace this construction in my claim, which is restricted to the article technically known as a "stop-valve" and adapted and intended to be applied in a line of pipe.

I claim as my invention—

1. In a stop-valve, the movable gate provided with an extension having an aperture of equal diameter with the passage through the valve and adapted to be brought into line with said passage, combined with a shell having a lateral recess to permit the necessary movement of the gate so constructed, substantially as described.

2. In combination with the valve shell and stem, the gate consisting of the part E′, apertured to form the valve-passage when brought into line with the adjacent pipes, one or more valves, D, and the projection E^2 on the part E, provided with the nut *e*, and with a projection, *e′*, engaging with the valve, substantially as described.

3. In a stop-valve, the valve-seat C, provided with the marginal flanges *c*, combined with the shell suitably recessed to receive the seat, and with the externally and removably secured bell B, substantially as and for the purposes set forth.

4. In combination with the shell of a stop-valve, the removable seat-ring C, having the outer flange, *c*, and the external flanged bell, B, overlying and retaining the seat-ring and secured to the shell, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

RICHARD BEAUMONT.

Witnesses:
M. E. DAYTON,
W. C. ADAMS.