

A. A. DAME.

Combined Stop and Check-Valves.

No. 139,878.

Patented June 17, 1873.

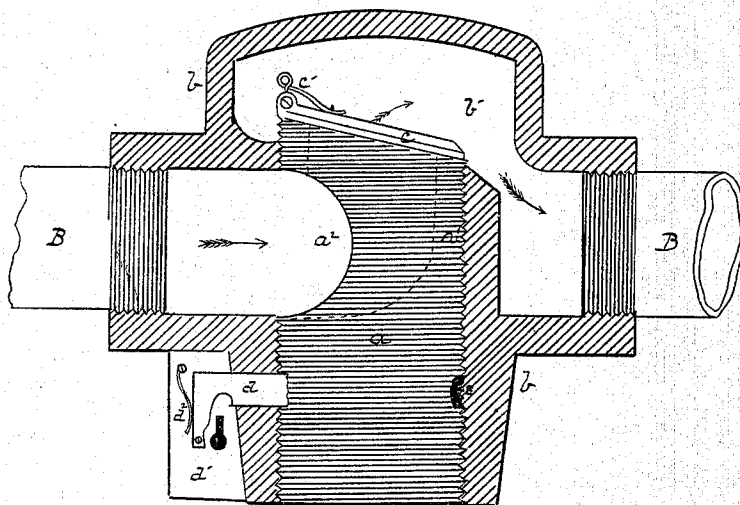


Fig. 1.

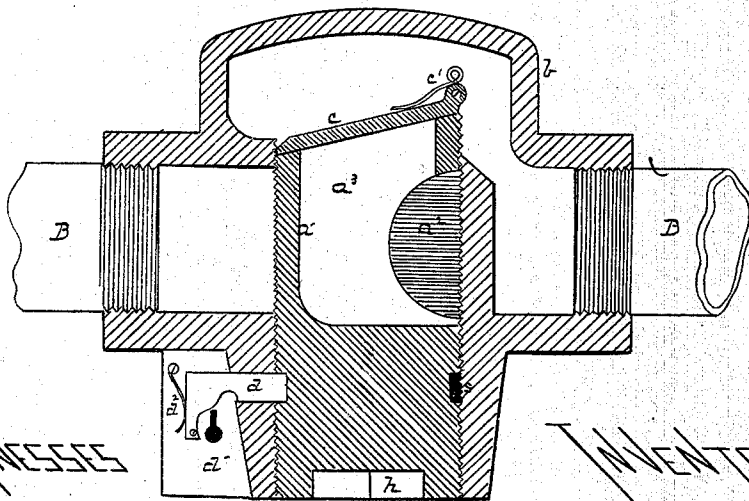


Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

AUGUSTUS A. DAME, OF TITUSVILLE, PENNSYLVANIA.

IMPROVEMENT IN COMBINED STOP AND CHECK VALVES.

Specification forming part of Letters Patent No. **139,878**, dated June 17, 1873; application filed March 13, 1873.

To all whom it may concern:

Be it known that I, AUGUSTUS A. DAME, of Titusville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improved Stop-Cock and Check-Valve Combined; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1, by a sectional view of the case and a side elevation of the plug, represents my improvement in proper position for the flow or discharge of fluid in the direction indicated by the arrows; and Fig. 2 is a sectional view of case and plug showing the cock closed.

Like letters of reference indicate like parts in each.

In the oil-producing regions "pipe-lines" have been extensively introduced as a means of conveying the crude petroleum from the wells or place of production to the place of shipment, often a distance of several miles. A pipe communication is made from a number of well-tanks to a single main pipe. The crude oil is gaged or measured in the well-tank, and, the quantity being ascertained, the cock is turned and the oil is permitted to flow, or is pumped or exhausted through the main pipe to the receiving-tanks at the place of shipment or delivery. It has been found that if an intermediate well-owner—that is one who connects with the main pipe at a point in or along the line of flow—opens the cock which leads from his tank to the main pipe, a portion of the oil will often be drawn off into his tank from the main pipe. If his cock be accidentally left open, the result is the same. In this way oil is abstracted or stolen in considerable quantities, with little or no danger of detection.

As a device to be used in such pipes, and for kindred purposes, I have devised a combined cock and check-valve, which I will proceed to explain, in order that others skilled in the art may be enabled to make and use the same.

The oil or other fluid is designed to flow through the pipe B B in the direction indicated by the arrow, Fig. 1, from the well-tank to the main pipe-line. At any suitable point

therein, in a suitable case, *b*, I arrange, on a threaded or ground seat, a hollow plug, *a*, with a surface correspondingly threaded or ground, and having one close or blind side, *a'*, and an open side, *a''*, which latter has an open communication or passage-way, *a'''*, (Fig. 2 and dotted lines Fig. 1,) out at the end of the hollow plug, and thence a passage-way, *b'*, leads back to the open line of the pipe. The passage way *a'''* has fitted therein or thereto a check-valve, *c*, which, in the form shown, consists of a lid which is hinged to the cock *a*, and is closed either by its own weight or by a spring, *c'*, of any desired suitable construction. The passages *a'' a''' b'* are preferably of the same as, or a little greater, area in cross-section than the bore of the pipes B B. Then when the cock is in the position shown in Fig. 1, the oil will flow, or may be pumped or exhausted freely from the well-tank through the passage-ways *a'' a''' b'*, but cannot flow back, since as soon as the forward flow ceases the valve *c* will close; and when the cock is turned to the position shown in Fig. 2 all communication is cut off, so that the oil cannot flow either way. The head of the cock is made with a wrench-socket, *h*, or a wrench-head or other equivalent means are provided for reversing its position.

Where, as in the uses above named, it is important that the check-valve should not be tampered with, I prefer to make the top of the valve-case close or solid with the other parts of the case, as shown, and insert the cock and valve from the under side of the pipe. As a further precaution against fraud or theft, I apply directly to the stop-cock a locking-bolt, *d*, which is arranged in a lock-case, *d'*, made on or as a part of the valve-case *b*. This lock-bolt is operated by a key in the usual way, or is held up by a spring, *d''*, in the manner employed in ordinary spring-locks and latches, the key in such latter case being used merely for unlocking. The bolt enters a recess or mortise, *s*, in the cock in whichever position the latter is set. The lock-bolt, being inclosed in a tight case, cannot easily be tampered with. When oil is to be delivered the cock is set and locked in the position shown in Fig. 1. The cock and valve will then deliver oil, but none can flow back. When all is delivered that is

desired the cock is reversed and locked in the position shown in Fig. 2. The oil cannot then flow in either direction.

If so desired, the lock-bolt may be arranged in the cock, and its locking end be made to engage or seat in recesses in the case. The operation will be the same. The form of the lock is not material, provided only it have a bolt the throw of which will effect the locking, and which locking-throw may be communicated by either a key or a spring.

If so preferred, the cock may be inserted from above, in which case the spring *c'* will become more important as a means of keeping the check-valve closed when oil is not being delivered.

The devices described may be applied to other pipes for the transmission of fluids, including steam or air. And where there is no occasion to guard against parties tampering with the check-valve, the top of the case *b* may be made removable for greater facility in getting at the valve for other purposes.

I am aware that a check-valve has been arranged directly in the bore or barrel of a stop-cock on a seat at or below the lower open end of the cock, and, consequently, in such position that in opening and closing it moved in, and occupied a part of, the through passage-way of the cock, and to that extent obstructed the flow. By arranging the check-valve, as I have done, on a seat at the open end of the bore, so that in opening it immediately uncovers the through passage-way over its whole extent, and at once moves out of the way of

the flow, I secure a construction that is much more useful, especially where, as in oil-pipe lines, a quick transit and a rapid and abundant discharge are important; and for this purpose it is immaterial whether a flap-valve or a puppet-valve be employed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the hollow plug or stop-cock *a*, a check-valve opening outward seated on its open end, and the chamber *b'*, arranged for the through flow of fluids, substantially as set forth.

2. The arrangement, in a line of pipe, of a stop-cock with its head projecting downward, and its open discharging-end upward, in combination with a check-valve seated on such upper open end, substantially as set forth.

3. The combination of a hollow plug or stop-cock, a check-valve opening outward seated on its outer open end, and a spring for pressing it to its seat, either wholly or in connection with the back pressure of the fluid, substantially as set forth.

4. The arrangement of a locking-bolt relatively to the stop-cock and its case, substantially as set forth, whereby the stop-cock is locked either open or shut.

In testimony whereof I, the said AUGUSTUS A. DAME, have hereunto set my hand.

AUGUSTUS A. DAME.

Witnesses:

WALDRON M. DAME,
JOSHUA DOUGLASS.