No. 854,319. PATENTED MAY 21, 1907.

J. WEBER.

VALVE.

APPLICATION FILED AUG. 15, 1906.

Fig. 1.

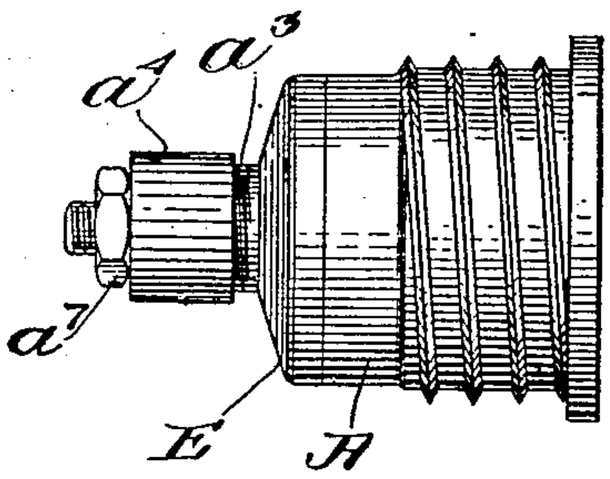


Fig. 2.

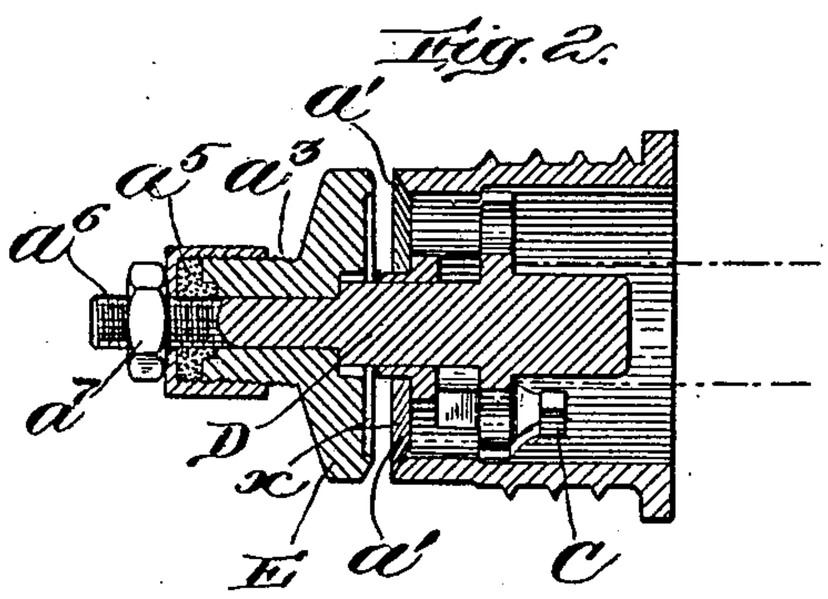


Fig. 3.

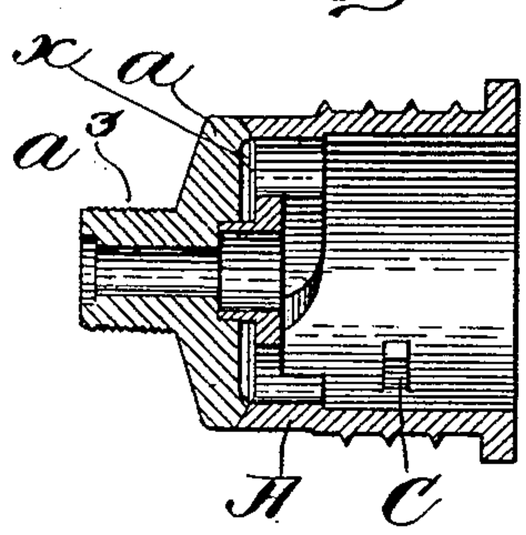


Fig. 4.

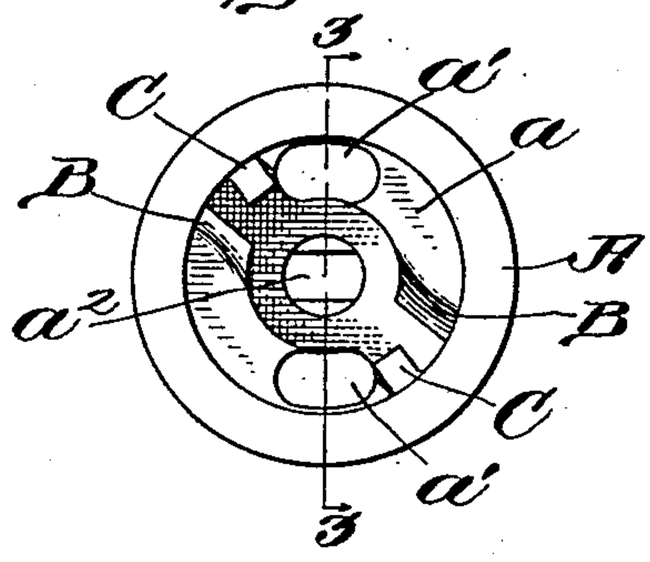


Fig. 5.

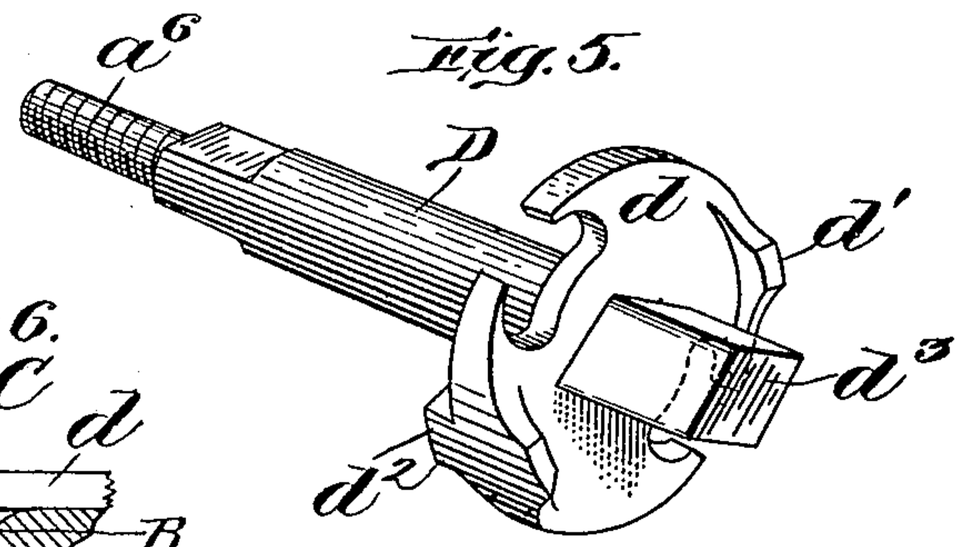
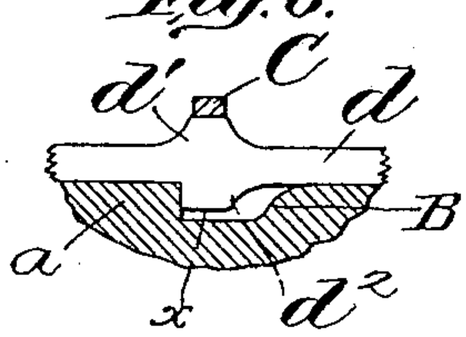


Fig. 6.



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UNITED STATES PATENT OFFICE.

JACOB WEBER, OF CHELSEA, MASSACHUSETTS.

VALVE.

No. 854,319. Specification of Letters Patent. Patented May 21, 1907.

Application filed August 15, 1906. Serial No. 330,662.

To all whom it may concern:

Be it known that I, JACOB WEBER, a subject of the Emperor of Germany, and a resident of Chelsea, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Valves, of which the following is a specification.

My invention is a new article of manufacture and is designed especially for use as a valve in a tap or faucet for casks of ale and the like, but it obviously may be used for other purposes.

As is well known, kegs, casks and the like, such as are used by brewers of ale and beer, are made with a tap hole in the head and stave through which the package may be filled by the brewer and through which its contents are drawn off by the consumer. It has been customary to fix a valve in the tap hole which could be used by the brewer in filling the package and by the consumer to control the discharge of the contents of the package. Ordinarily this valve has been made up of a body exteriorly threaded and screwed into the tap hole, a rotary slide or gate valve at the inner end of the body and within the package and a stem extending from the valve through the valve body to the exterior of the package, the outer end of which stem was adapted to be engaged by a detachable faucet wrench through turning which the stem could be rotated and the valve opened.

It is customary in the use of ale casks and the like to coat the interior of the cask at intervals with hot pitch. It is obvious that in any valve in which there are openings opening to the interior of the cask, the liquid pitch will or may enter the openings and so cement the parts of the valve together that it may be impossible thereafter to operate the valve unless very great force is used which may result in breaking the parts of the valve, and in any event the pitch may get between the opposed faces and score or pit them so that the valve will not be either liquid or gas tight which it is essential that the valve should be.

My improved valve is designed to present to the interior of the cask a practically continuous surface and in its opening and closing to have a peculiar movement compounded of a rotary movement and a horizontal movement so that the pitch deposited upon the surface of the valve casing within the cask is easily broken along the junction line of the two parts of the valve and designed to be moved positively both in its opening movement and in its closing movement without any use whatever of springs and to be securely locked both in its open position and in its closed position.

In the accompanying drawings,—Figure 1 is a side elevation of my valve in its closed position; Fig. 2 is a vertical section of Fig. 1 in the same plane showing the valve in its open position; Fig. 3 is a section on the line 3—3 of Fig. 4; Fig. 4 shows the interior of the valve casing; Fig. 5 is a perspective of the valve stem and crown cams; and Fig. 6 is a diagrammatic view showing a development of the wing cam and adjacent members of the casing.

In my improved valve the valve body A is a hollow shell exteriorly threaded as usual and closed at its inner end by a wall a in which are ports a' and a passage a^2 for the valve stem. Upon the face of this end wall a within the body A are two cam surfaces B, and upon the interior side walls of body A are two cam lugs or projections C. The valve stem D carries near its outer end two wings d, these wings carrying upon both the upper surface and the under surface properly shaped cam surfaces d' d^2 which co-operate respectively with the cam surfaces B upon the outer surface of the end wall and the cam lugs C disposed upon the inside walls of the body. The outer end d^3 of this valve stem is of angular section to receive a socket wrench, which is usually formed upon the inner end of the removable faucet, by means of which the valve stem may be turned. The valve stem is passed through the aperture provided in the inner wall of the body, the cam lugs C upon the inside walls of the body passing between the ends of the two wings to permit the two wings to pass below them and between the cam lugs C on the side wall and the cam surface B upon the inside of the end wall. When so positioned the cams upon the upper and the under surface of the wings are in position to co-operate with the cam surfaces upon the inner side of the end wall and the cam surfaces on the lugs disposed upon the inside wall of the body. The valve stem projecting through the inner wall as afore-

said into the cask passes through a cylindrical extension a^3 over which is screwed a stuffing cap a^4 between which and the end of the extension a^3 is compressed suitable packing a^5. At the extreme end of the stem it is threaded, as at a^6, and carries a nut a^7 by means of which the valve E is held in place upon a squared portion of the stem. This valve E is a disk, which, as shown in the drawings, and as preferred, has, upon the periphery of the face opposed to the inner end of the valve body, a beveled valve face, which co-operates with a corresponding face upon the end of the valve body. The diameter of this disk is equal to the diameter of the valve body, and the valve faces are accurately fitted, so that when the valve is closed there is hardly an indication of the joint. Within the conical valve seat is a recess x the purpose of which is to receive and hold harmlessly any particles of pitch that may find their way onto or through the valve seats.

The cam surfaces upon the body and upon the valve stem wings are so disposed, as shown in the drawings, that a quarter turn of the valve stem will cause the valve stem to be moved inwardly to open the valve, if it be closed or outwardly to close it if it be open, the stem and valve, during the movement longitudinal of the axis turning one quarter turn, so that a point upon the periphery of the valve will move in a helical path. At the end of each movement the cams ride upon flat surfaces so that the stem and valve are locked against any movement endwise and can only be moved, by rotating the stem to reverse the position of the valve.

The locking action of the parts when the valve is open is clearly shown in Fig. 6. When the cam projection d^2 passes into the recess, one side of which is cam B, the flat upper surface of the cam projection d' is beneath the lug C so that direct longitudinal movement of the stem is prevented. When the stem is turned the cam d^2 rides up cam B until the flat surface x is upon the inner surface of wall a, thus locking the stem against longitudinal movement until it is again turned to cause the cam d' to engage lug C and cam d^2 to ride down cam B, when the parts will again be in the position shown in Fig. 6.

I claim:

1. As a new article of manufacture, the valve, made up of a hollow body portion, having a perforate wall at one end, abutments upon the inside of the body; a stem having cam wings the upper surface of which co-operates with one abutment and the lower surface with another abutment to cause the stem to be first rotated and then moved longitudinally as it is rotated, the inner end of the stem passing through the wall of the body and carrying a valve plate; that valve plate, adapted, by the rotating-longitudinal movement of the valve stem to be moved against or away from the inner wall of the body.

2. As a new article of manufacture, the valve, made up of a hollow body portion, having a perforate wall, abutments upon the inside of the body; a stem having wings carrying cam surfaces upon the upper and lower surfaces thereof, the cams being opposed in action and co-operating with the abutments upon the inside of the body to actuate the stem longitudinally and lock it in its extreme positions, the inner end of the stem projecting through the end wall of the body and carrying a valve fast thereto, all organized to hold the valve against or away from the inner wall of the body.

3. As a new article of manufacture, the valve, made up of a hollow body portion, having a perforate wall; abutments upon the inside of the body; a stem having cam wings the upper surface of which co-operates with one abutment and the lower surface with another abutment to cause the stem to be moved longitudinally as it is rotated, the inner end of the stem passing through the wall of the body and carrying a valve plate; corresponding conical valve seats upon the periphery of the valve plate and body and a recessed portion within the plate seat, substantially as described.

Signed by me at Boston, Massachusetts, this tenth day of August 1906.

JACOB WEBER.

Witnesses:

DILLON BEEBE, Jr.,

JOSEPHINE H. RYAN.