

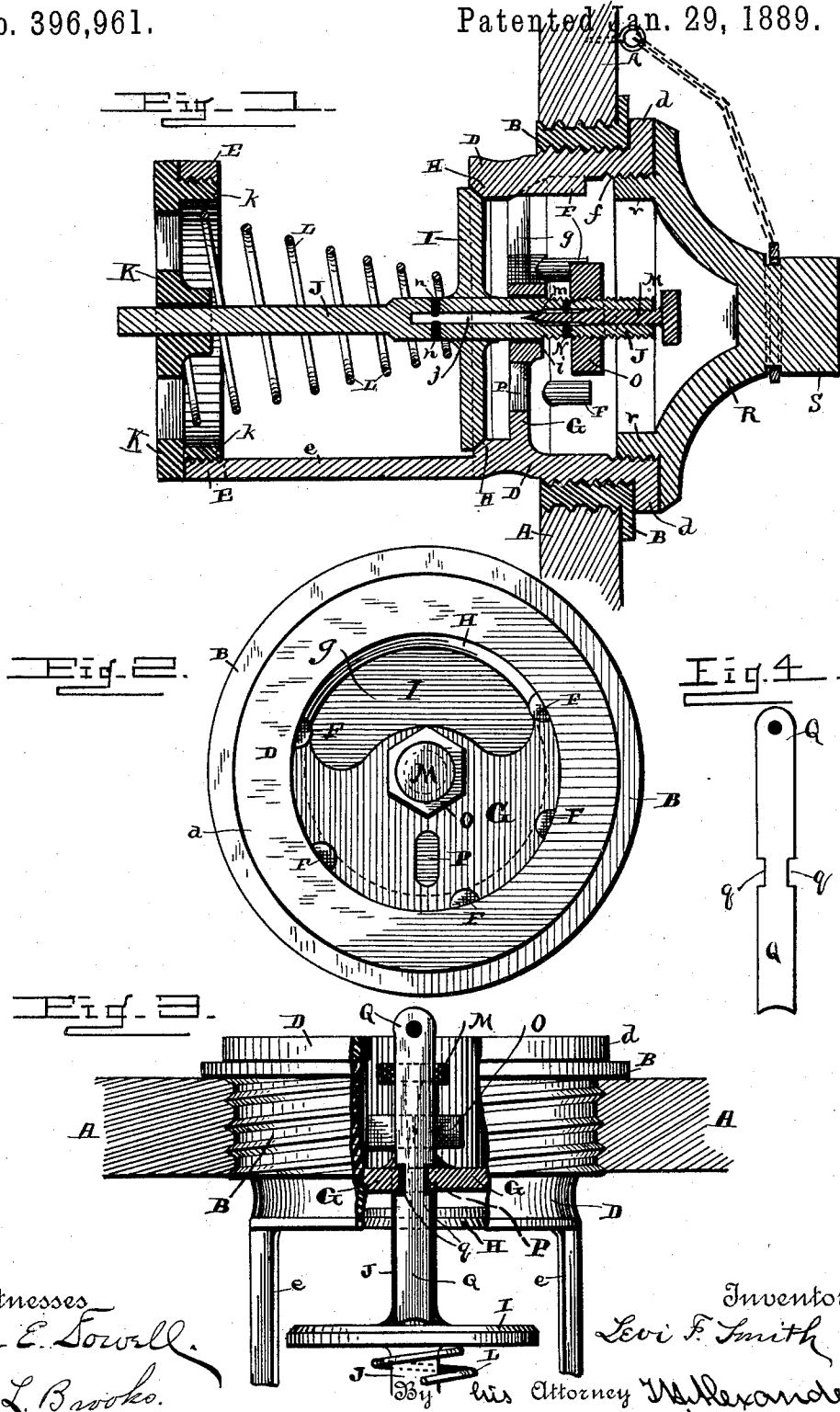
(No Model.)

L. F. SMITH.

AUTOMATIC STOP VALVE BUNG.

No. 396,961.

Patented Jan. 29, 1889.



Witnesses
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UNITED STATES PATENT OFFICE.

LEVI F. SMITH, OF PHILADELPHIA, PENNSYLVANIA.

AUTOMATIC STOP-VALVE BUNG.

SPECIFICATION forming part of Letters Patent No. 396,961, dated January 29, 1889.

Application filed May 21, 1888. Serial No. 274,484. (No model.)

To all whom it may concern:

Be it known that I, LEVI F. SMITH, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain
5 new and useful Improvements in Automatic Stop-Valve Bungs; 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
10 of reference marked thereon, which form part of this specification, in which—

Figure 1 is a central longitudinal section through my improved stop-valve bung. Fig. 2 is a face view of the same with the top removed. Fig. 3 is a detail sectional view showing the valve-depressing devices. Fig. 4 is a detail view of the keg.

This invention is an improvement in valved bungs for tanks, and is especially designed
20 for use on casks and barrels containing malt or fermenting liquors. Its objects are to provide a stop-valve bung and air-valve combined, the stop-valve being automatically closed by a spring and the air vent or valve
25 being arranged in the stem of the stop-valve and adapted to be closed independently of the stop-valve.

Another object of the invention is to so construct the bung that the valve can be held
30 open while the cask or barrel is being filled. This stop-valve bung is especially adapted for use on liquid-transporting vessels, as the vessel can be filled without removing the bung, and when filled can be hermetically closed;
35 and to these ends the invention consists in the novel construction and arrangement of parts of the stop and air valve bung, as are hereinafter clearly described, illustrated in the drawings, and concisely stated in the
40 claims hereto appended.

Referring to the drawings by letters, A represents a portion of a cask or vessel having a bung-hole, in which is fitted an annular flanged bushing, B. This bushing is screw-threaded
45 exteriorly for securing it in the bung-hole and interiorly for the engagement of my improved stop and air valve bung. The said bung has a cylindrical outer shell or casing, D, that is flanged at its outer end, as shown at *d*, and adjoining said flange the shell is exteriorly
50 screw-threaded for engaging the inner threads of bushing B, in which the valve is secured,

as shown. The inner end of shell D has an annular interiorly-screw-threaded ring, E, which is connected to the main body of the
55 shell by legs or arms *e e*, as shown. The outer end of the shell is also screw-threaded interiorly, as at *f*, and below said screw-threaded portion is a semi-annular partition, G, that is formed integral with the shell, leaving
60 an opening, *g*, to one side thereof. Above or outside said partition G and threads *f* are formed a series of lugs, F F, that project slightly inward from the wall of the shell and
65 afford bearings for the engagement of a wrench, by which the stop-valve bung can be screwed into or out of place.

Below the partition G is an internal annular ring or projection, H, the inner edge of which is dressed to form a proper seat for the
70 annular valve I. Valve I is of such diameter as to move easily within the arms *e*, and is dressed on its upper face to fit properly against its seat, as shown. The valve is mounted centrally on a stem, J, the outer end of which
75 extends upward through an opening, *i*, in partition G, which opening is in the axial line of the shell, and the rear end of the stem passes through an opening in the center of a disk, K, which has a flange, *k*, preferably
80 screw-threaded exteriorly, by which said disk is engaged with the threaded ring E and secured to the shell. The disk K may be secured to the ring E in any other suitable manner—such as by lugs and nuts; but I prefer
85 employing the screw-thread, as the valve can then be more readily removed for re-dressing when it becomes worn. Said disk K is perforated. The stem and valve being thus
90 mounted and centered in shell D, the valve is rendered self-closing by means of a spiral conical spring, L, which is slipped on the valve-stem between the valve and disk K, acting directly against the valve, as shown. The
95 end of valve-stem J, that passes through partition G, is screw-threaded exteriorly and bored interiorly, as shown at *j*, said bore passing centrally through the stem from its outer end to a point below the valve. Said bore *j*
100 is shouldered at *m*, above the valve, and above said shoulder is screw-threaded, as shown.

M is a screw-plug engaging the threaded portion of bore *j*, and of such length that when screwed home its inner end, which is

properly dressed, will seat on shoulder *m* of the bore and close the latter.

N is an opening passing laterally through the valve-stem communicating with bore *j* 5 above shoulder *m* and the valve, and *n* is a similar opening communicating with bore *j* below the valve, as shown.

The plug M is suitably headed to render its manipulation by the fingers easy.

10 O is a nut on the end of stem J, above partition G, which can be screwed down to lock the valve in its seat. The enlarged head of plug M prevents nut O being turned off the stem.

15 P is a slot in partition G to one side of opening *i*, and Q is a key or flat bar of metal provided with opposite shoulders or notches, *q q*, on its side edges.

R is a metal cap having an exteriorly-screw-threaded flange, *r*, which cap is adapted to be engaged with threads *f* of the shell and securely close the latter. Said cap may be provided with an external angular knob, S, by which it can be manipulated, and said cap may be 25 attached to the cask, shell, or bushing by a chain, if desired, to prevent its being misplaced.

The manner of using the device is as follows: The bushing B is first secured in the 30 bung-hole, then the bung is screwed into said bushing, as shown, the valve being kept closed by a spring, as is evident. If it is desired to fill the cask, the key Q is inserted through opening P in partition G and the 35 valve depressed thereby. The key is then turned in opening P, and its notches *q q* engage the lower edges of said slot, thereby locking the key and holding the valve open. The tube through which the liquor is to be 40 supplied to the barrel can then be passed through opening *g* and between two of the arms *e* into the barrel. When filled, the tube is withdrawn, key Q disengaged, and the valve immediately is automatically closed. Now 45 if the cask is to be transported, nut O is screwed down against partition G, absolutely locking the valve, so that it cannot become displaced, and cap R is put in place, protecting the parts of the bung from injury. When 50 it is desired to admit air to the cask without opening valve I, the plug M is partly unscrewed until it permits communication between opening N and bore *j*, and when this is done air can at once pass through said opening 55 into the bore above the valve and from said bore through opening *m* into the cask below the valve.

Having described my invention, I claim—

1. In a stop-valve bung, the combination of 60 the cylindrical shell screw-threaded exteriorly at one end and screw-threaded interiorly at both ends, and having a semi-annular partition, an annular valve-seat at one end, with a valve and a valve-stem carrying said 65 valve and having one end playing through an opening in said partition and screw-threaded, and having its other end playing

through a screw-threaded disk in the lower end of the shell, a coiled spring for operating said valve, and the nut on the threaded end 70 of the stem, all constructed and arranged substantially in the manner and for the purpose described.

2. The combination of the shell, its valve-seat, and valve having a valve-stem bored 75 longitudinally to establish communication through the bung when the valve is closed, and having lateral openings communicating with the bore at opposite sides of the valve, with a screw-plug, M, for closing said bore 80 and cutting off communication therethrough, substantially in the manner and for the purpose described.

3. The combination of a shell having an annular valve-seat, and a spring-actuated valve, 85 with a valve-stem carrying said valve, having a central bore and openings communicating therewith on opposite sides of the valve, a screw-plug in the outer end of said stem for closing communication through its bore, 90 and a nut on said stem for regulating the movement of the valve, all constructed and arranged substantially in the manner and for the purpose described.

4. In a stop-valve bung, the combination of 95 the shell D, having internal partitions, G, an annular valve-seat below said partition, and an interiorly screw-threaded ring, E, at its opposite end, with the valve I, valve-stem J, nut O, disk K, exteriorly screw-threaded, and 100 spring L, all constructed and arranged substantially in the manner and for the purpose described.

5. The herein-described stop-valve bung, consisting of a cylindrical exteriorly-screw- 105 threaded shell formed with a transverse perforated partition near its outer end, and an annular valve-seat at the inner side of said partition, in combination with a valve-stem, J, carrying a valve, I, and playing through a 110 central opening in said partition and through an opening in a disk, K, secured in the inner end of the shell, the conical spring controlling said valve, and the setting-nut O on the end of the valve-stem outside the said 115 partition, substantially as and for the purpose set forth.

6. The combination of the flanged exteriorly and interiorly screw-threaded bushing B with the stop-valve bung having an 120 exteriorly-threaded portion engaging said bushing, and a perforated partition, G, valve-seat H, a spring-actuated valve, I, its stem J, having bore *j* and openings N *n*, the nut O, and plug M, and key Q, all constructed and 125 arranged to operate as and for the purpose described.

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

LEVI F. SMITH.

Witnesses:

T. H. ALEXANDER,
F. T. F. JOHNSON.