No. 651,727. Patented June 12, 1900.

A. SCHNEIDER.

BOTTLING MACHINE.

(Application filed Mar. 15, 1900.)

(No Model.) 4 Sheets—Sheet 1.

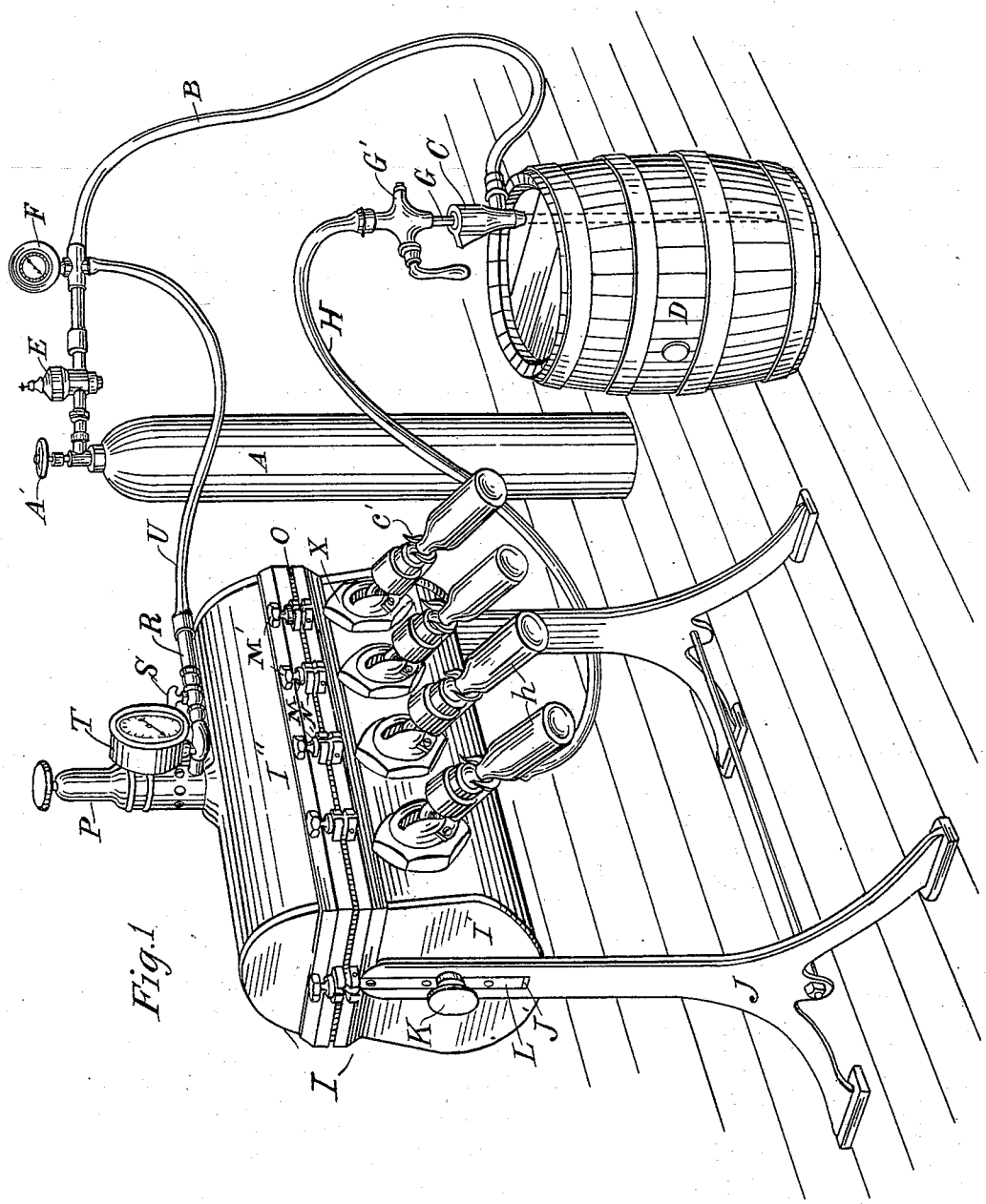


Fig. 1.

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Fig. 2.

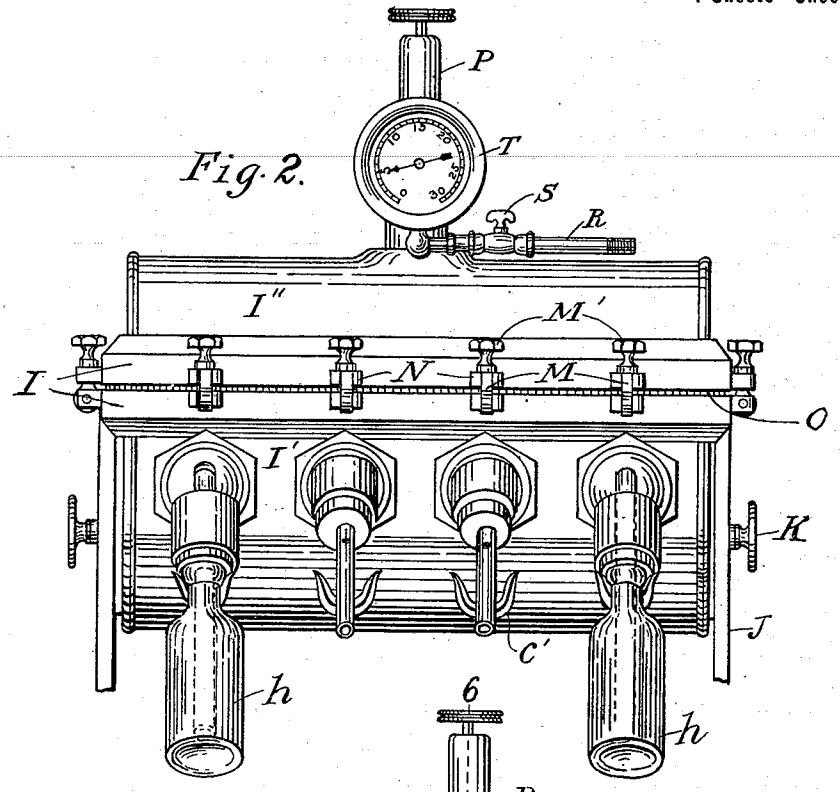
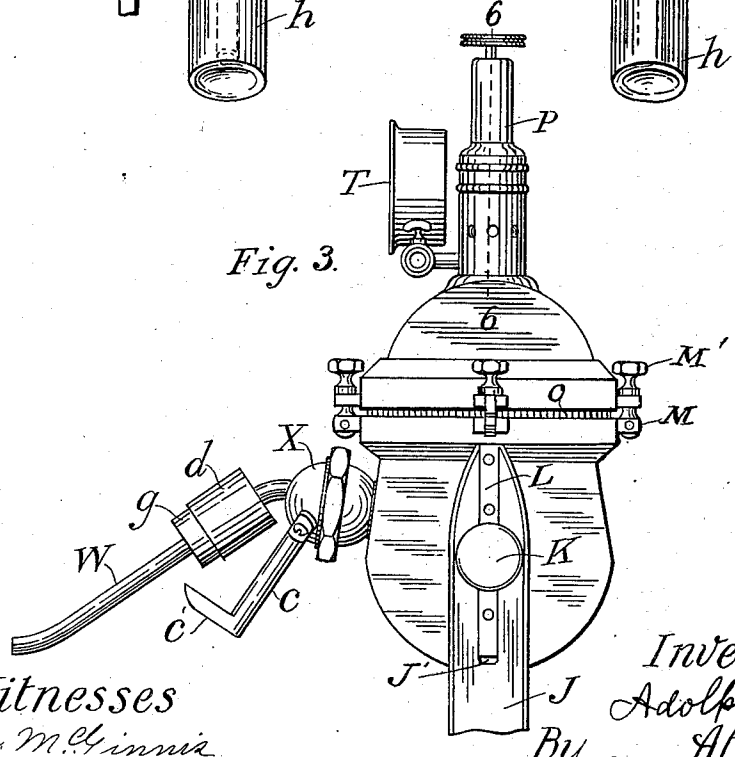


Fig. 3.



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Fig. 4.

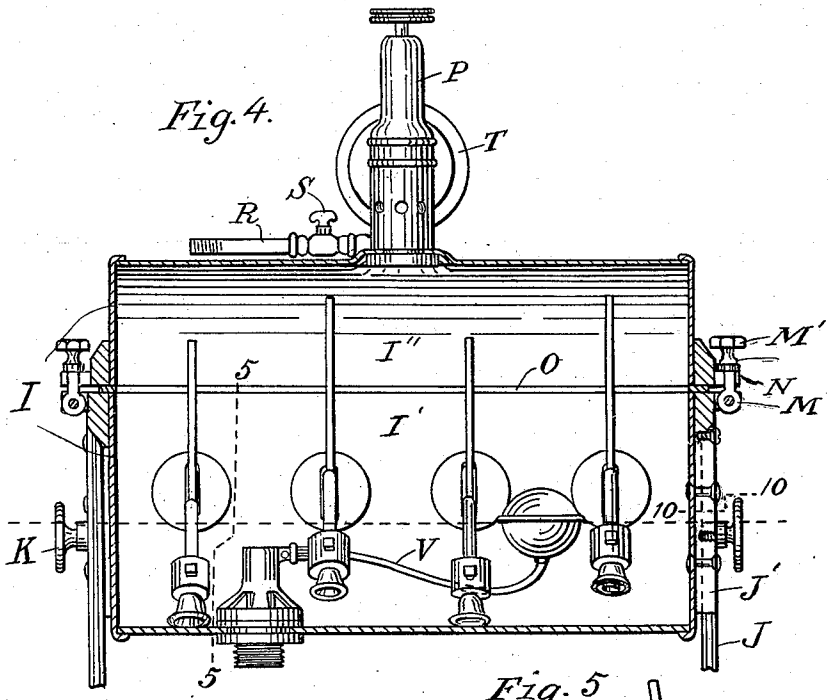


Fig. 6

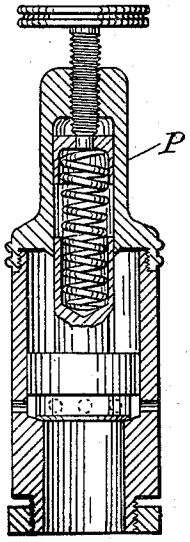


Fig. 5

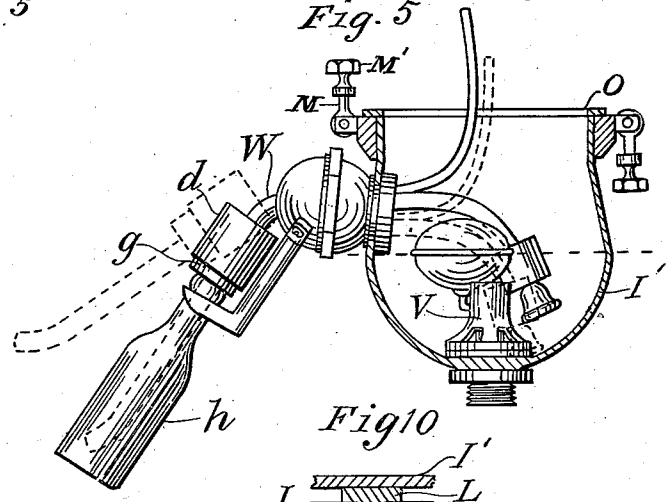
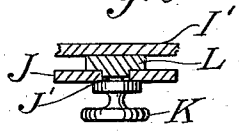


Fig 10



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No. 651,727. Patented June 12, 1900.

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(Application filed Mar. 15, 1900.)

(No Model.) 4 Sheets—Sheet 4.

Fig. 7

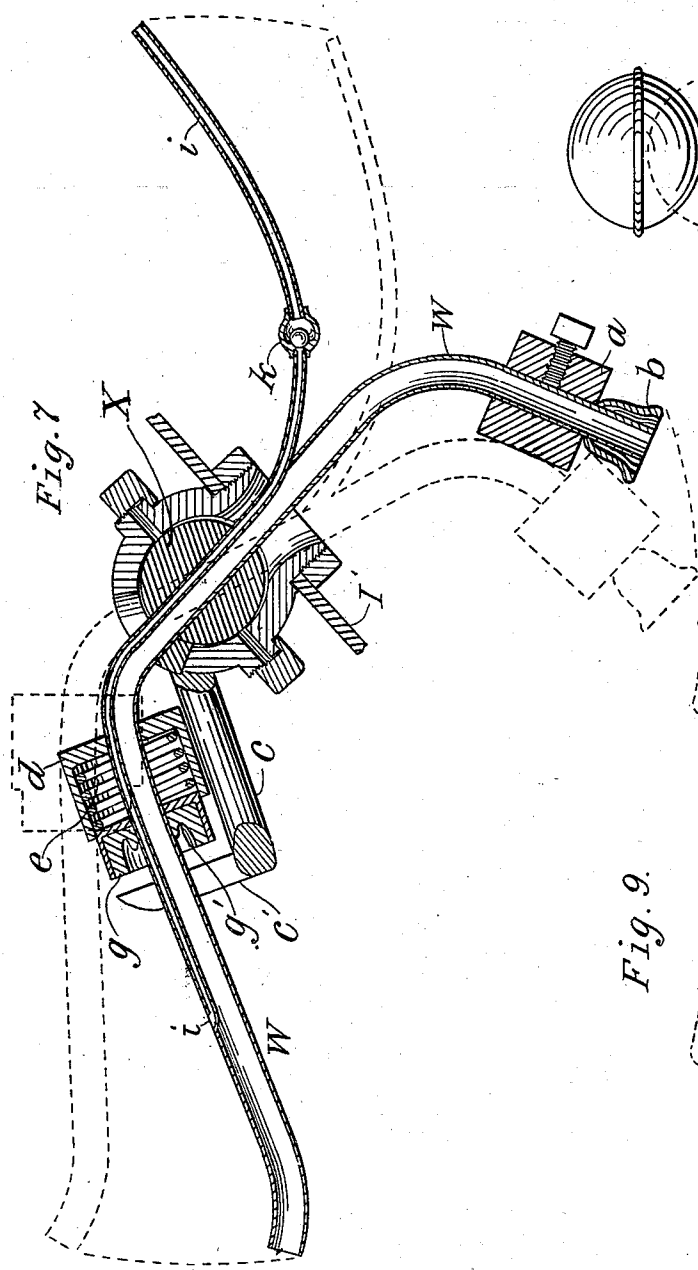


Fig. 8

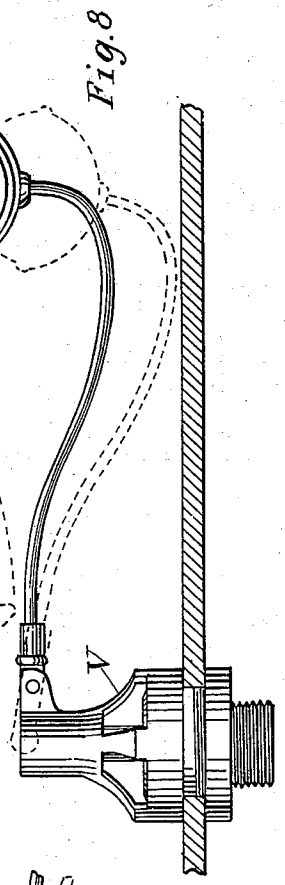
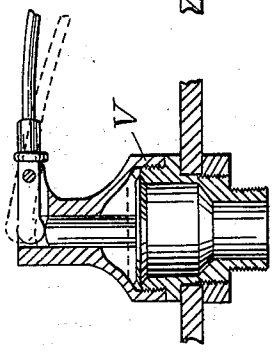


Fig. 9.



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UNITED STATES PATENT OFFICE.

ADOLPH SCHNEIDER, OF TRINIDAD, COLORADO.

BOTTLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 651,727, dated June 12, 1900.

Application filed March 15, 1900. Serial No. 8,826. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH SCHNEIDER, a citizen of the United States, residing at Trinidad, in the county of Las Animas, in the State of Colorado, have invented new and useful Improvements in Bottling-Machines, of which the following is a specification.

My invention relates to machines for bottling malt liquors; and the object thereof is to provide a machine that will fill such liquor into bottles automatically without producing foam. I accomplish this object by the mechanism described herein and illustrated in the accompanying drawings, forming a part hereof, in which—

Figure 1 is a perspective view of my machine applied to a barrel of malt liquor. Fig. 2 is a side view of the liquor-distributing tank. Fig. 3 is an end view of the same. Fig. 4 is a longitudinal vertical section of the liquor-distributing tank. Fig. 5 is a cross-section on line 5 5 of Fig. 4 with the top of the tank removed. Fig. 6 is a vertical section of my pressure-regulating valve on line 6 6 of Fig. 3. Fig. 7 is a sectional view of my siphon-tube and connecting mechanism. Fig. 8 is a side view of my ball cock-valve for regulating the quantity of liquor admitted into the distributing-tank, and Fig. 9 is a cross-section of the valve. Fig. 10 is a cross-section on line 10 10 of Fig. 4.

In the drawings, A represents a drum charged with compressed air or other expansible gas, having cock A′ to control the flow of air therefrom, and is connected by pipe B, preferably a flexible piece of hose, with tapping-bung C, driven into barrel D, filled with malt liquor, which permits the air to be discharged upon the top of the liquor. An air-compressor or any other suitable mechanism to supply air or gas under pressure may be substituted for drum A, and for barrel D any other suitable receptacle may be used. On pipe B is vacuum-valve E, which regulates the air-pressure through pipe B.

F is a pressure-gage to indicate the pressure in pipe B.

G is a pipe which extends through bung C to the bottom of barrel D.

G′ is a cock attached at one of its ports to pipe G for closing the connection between the barrel and the distributing-tank when it is necessary to connect a fresh barrel of liquor with the machine. To the other port of cock G is attached pipe H, preferably a flexible pipe, which is connected at the other end to distributing-tank I, through which cock G′ and pipe G liquor passes from barrel D into distributing-tank I. Tank I is mounted in frame J and is adjustable therein as to height by set-screws K, which screw into guide-flanges L, affixed to the ends of tank I, and pass through slots J′ in the frame and clamp said flanges against frame J. Tank I is preferably constructed in two parts, so that it can be easily cleaned, which are held together by pivoted bolts M, attached to the body-section I′ of the tank. These bolts turn up and pass through bifurcated lugs N, affixed to the upper portion or cover I″ of the tank, and when the nuts M′ are screwed down they engage the lugs and draw the two parts of the tank together. In order that the joint between the parts shall be perfectly tight, I place a rubber gasket O in the joint. At the top of tank I is pressure-regulating valve P (shown in detail in Fig. 6) to regulate the air or gas pressure in tank I. To the top of tank I, preferably at or near valve P, is connected pipe R, having stop-cock S thereon. On pipe R, between cock S and valve P, is pressure-indicator T. Pipe R is connected with pipe B by pipe U, preferably flexible hose. In the bottom of tank I is a ball-cock V, which controls the admission of liquor into tank I through pipe H and is adapted to prevent the liquor in the tank from rising above a predetermined height. The siphon-tube W passes through the spherical pivot X, mounted in bearings in the side of tank I, and affords means for oscillating the siphon-tube. On the inner end of tube W is a weight *a* to cause the end of tube W to carry flexible rubber cup *b* into liquor-tight contact with the bottom of tank I to prevent any liquor passing through or out of tube W when the siphon is not in use. Affixed to the casing of spherical pivot X is bar *c*, the end of which is bifurcated and turned at right angles to the body portion, forming arms *c′* to receive and hold the neck of bottle *h* when it is being filled with liquor. If preferred, bar *c* could be attached to tank I. Affixed to tube W is chamber *d*, preferably cylindrical and closed at one end, in

which is mounted spring *e*, adapted to force gasket *g* upon the mouth of bottle *h* when placed in the machine and make an air-tight joint between the bottle and the tube. Gasket *g* surrounds tube W and has a sliding movement thereon and is constructed of rubber or other yielding material. It has a cylindrical opening therein, adapted to fit over the mouth of the bottle, which terminates in an annular wedge-shaped groove *g'*, the inner part of the gasket, which forms the groove, being adapted to be wedged between the inner side of the mouth of the bottle and the siphon-tube when pressed downward by spring *e* and the outer portion to pass over the mouth. This construction enables the formation of an air-tight joint between the bottle, the gasket, and the siphon-tube when the top of the bottle is not perfectly even or when chipped. Any other form of gasket that will make the joint between the tube and bottle may be used instead of the form shown. By mounting spring E in such manner as to give the proper pressure on the gasket chamber *d* could be dispensed with.

i is a small air-vent tube which preferably enters tube W within tank I and terminates in an opening *i'* a short distance from the outer end of tube W. This tube permits the escape of air in the liquor-holding space of the bottle into tank I when the bottle is being filled. The outer end of tube W should project just a little short of as far beyond arms *c'* as the depth of the shortest bottle that the machine is used to fill, and opening *i'* should be placed at such a distance from arms *c'* as is desired to have the height of the liquor in the bottle, which automatically ceases as soon as it rises high enough to cover opening *i'*. The inner end of tube *i* projects above the liquor in tank I at all times. On tube *i*, preferably within tank I and before it enters tube W, is check-valve *k*, which permits the air to flow therethrough into tank I when the bottle is being filled and prevents its flow in the opposite direction.

My machine is operated as follows: A barrel of malt liquor is connected to the bottling-machine, as shown in Fig. 1. The air or gas pressure is then regulated to, say, five pounds, as indicated by gages F and T. Cock S is then closed, and valve P is set at a pressure, say, of four and one-half pounds, that will permit the five pounds' pressure on the top of the liquor in barrel D to force the same into tank I until the flow is automatically cut off by ball-cock V, when the machine is ready for filling bottles. A bottle is then placed on the end of the siphon-tube, and gasket *g* is pushed up far enough to permit the neck of the bottle to be placed in the arms *c'*, where it is securely held by the retractile force of spring *e*. The movement of the tube W, caused by placing the neck of the bottle in arms *c'*, causes the inner end thereof to detach cup *b* from the bottom of tank I and rise high enough so that the liquor is forced through tube W into the bottle, where it displaces the air and forces it out through tube *i* until the liquor rises to the opening *i'* thereof, when the bottle is filled and should be removed. The removal of the bottle causes the inner end of the siphon-tube to bring cup *b* into contact with the bottom of tank I, where it is securely held by the weight *a* until another bottle is placed in position to be filled. The air that is forced out of the bottle is permitted to escape through valve P, so that there is always maintained an even difference of pressure between the tank and the barrel, and the liquor is prevented from foaming by the even steady pressure on the liquor in the bottle.

I have illustrated in the drawings a machine for holding four bottles at one time; but it is obvious that the machine may be made to hold any desired number of bottles.

Having described my invention, what I claim is—

1. A machine for bottling malt liquors, comprising suitable means to supply air under pressure, a pipe connecting such air-supply with a tapping-bung; a tapping-bung adapted to be driven into a receptacle for holding malt liquor, and to permit air to pass therethrough on the top of the liquor; a pipe extending through said tapping-bung to the bottom of the receptacle holding the liquor, a cock on the upper end of the pipe extending through said bung, a pipe connecting said cock with a liquor-distributing tank, a liquor-distributing tank, spherical pivots connected to said tank by the casing thereof, siphon-tubes extending through said spherical pivots in air-tight contact therewith, partly within and partly without said tank, and having a vertical movement; a flexible cup-packing on the inner end of said siphon-tubes, a weight on the inner ends of said siphon-tubes adapted to hold the packing thereon in contact with the bottom of said tank when there is no bottle on the outer end of the tube, a bar having a bifurcated end, attached to the casing of the spherical pivots, adapted to receive and hold a bottle while being filled; a chamber on the outer end of the siphon-tube intermediate the spherical pivots and the arms of the bottle-holding bar; a gasket in said chamber adapted to form an air-tight joint between the bottle and tube; a spring in said chamber above said gasket adapted to force the gasket onto the mouth of the bottle when held in the arms of the bottle-holding bar, and make an air-tight joint between the bottle and the siphon-tube, and an air-vent tube, partly within the siphon-tube and partly in the distributing-tank, adapted to permit the air in the liquor-space in the bottle to pass into the distributing-tank, substantially as described herein.

2. In a machine for bottling malt liquors, combination of a suitable means to supply air under pressure, a pipe connecting such air-supply with a tapping-bung; a tapping-

bung adapted to be driven into a receptacle for holding malt liquor; a pipe extending through said tapping-bung to the bottom of the receptacle holding the liquor, a cock on the upper end of the pipe extending through said bung, a pipe connecting said cock with a liquor-distributing tank, a liquor-distributing tank, spherical pivots connected to said tank by the casing thereof, siphon-tubes extending through said spherical pivots in air-tight contact therewith, partly within and partly without said tank, and having a vertical movement; a flexible cup-packing on the inner end of said siphon-tubes, a weight on the inner ends of said siphon-tubes adapted to hold the packing thereon in contact with the bottom of said tank when there is no bottle on the outer end of the tube, a bar having a bifurcated end attached to the casing of the spherical pivots, adapted to receive and hold a bottle while being filled; a chamber on the outer end of the siphon-tube intermediate the spherical pivots and the arms of the bottle-holding bar; a gasket in said chamber; a spring in said chamber above said gasket adapted to force the gasket onto the mouth of the bottle when held in the arms of the bottle-holding bar, and make an air-tight joint between the bottle and the siphon-tube, and an air-vent tube partly within the siphon-tube and partly in the distributing-tank, adapted to permit the air in the liquor-space in the bottle to pass into the distributing-tank with bottles and malt liquor in a receptacle, substantially as described herein.

3. A bottling-machine for bottling malt liquors, comprising drum A; pipe B, connecting said drum with bung C; bung C adapted to be driven into barrel D to permit the air to be discharged therethrough on the top of the liquor in said barrel; barrel D; pipe G adapted to pass through bung C and into barrel D to the bottom thereof; cock G′ attached to pipes G and H; pipe H attached to cock G′ and distributing-tank I; spherical pivots X in bearings affixed to the casing of said tank; siphon-tubes, partly within and partly without said tank, passing through said pivots; weight *a* and cup *b* on the inner end of said siphon-tubes, and chambers *d*, springs *e*, gaskets *g* surrounding said siphon-tubes exterior said tank; tubes *i* partly within and partly without said siphon-tubes; check-valves *k* on tubes *i*; and bottle-holding bar *c* having arms *c′*, and distributing-tank I.

4. In a machine for bottling malt liquors, the combination of a distributing-tank, a spherical pivot connected thereto and a bottle-holding arm affixed to the casing of said spherical pivot, a siphon-tube passing through said spherical pivot, an air-vent tube partly within and partly without said siphon-tube, a check-valve on said vent-tube, a weight and a flexible packing on the inner end of said siphon-tube, a gasket, adapted to surround and move on said siphon-tube; a spring on said siphon-tube adapted to cause the gasket to produce an air-tight joint between the bottle and siphon-tube, with a bottle and a suitable liquor-supply, and means to apply pressure thereto to force the liquor into the bottle.

In witness that I claim the foregoing I have hereunto subscribed my name, this 8th day of March, 1900, at Los Angeles, California.

ADOLPH SCHNEIDER.

Witnesses:

G. E. HARPHAM,

M. MCGINNIS.