

C. S. RICHMAN.
LIQUID DISPENSING APPARATUS.
APPLICATION FILED JULY 25, 1908.

932,497.

Patented Aug. 31, 1909.

2 SHEETS—SHEET 1.

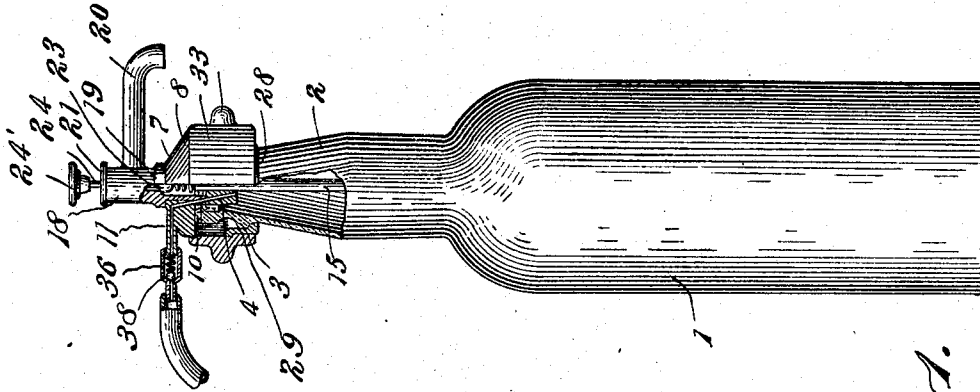


Fig. 1.

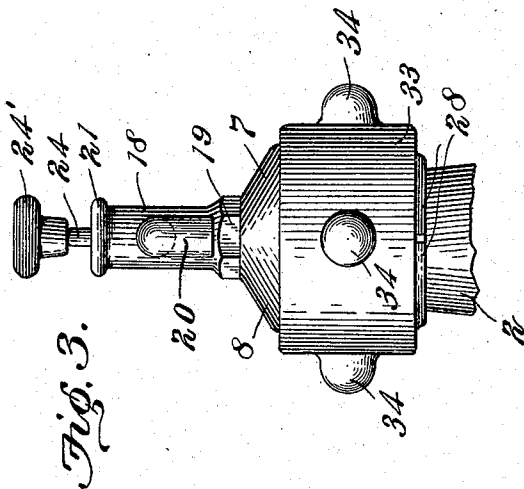


Fig. 3.

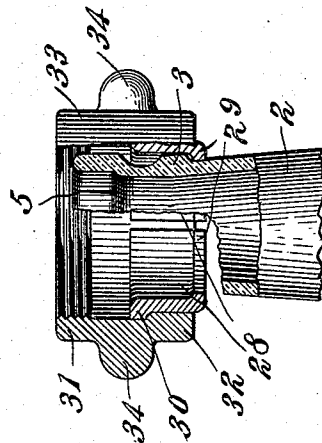


Fig. 6.

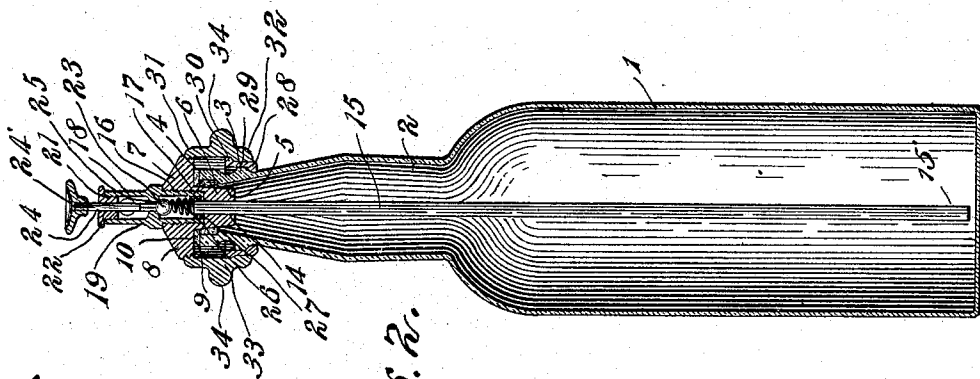


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 5.

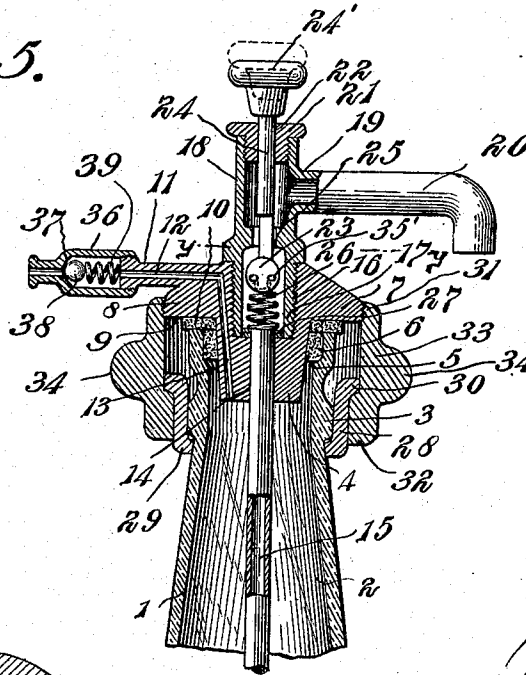


Fig. 9.

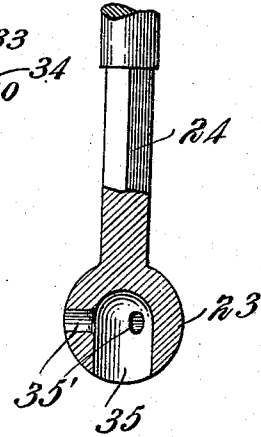


Fig. 7.

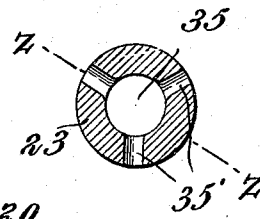
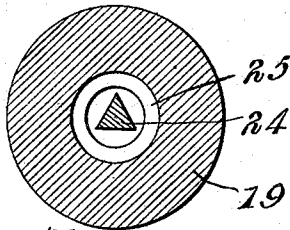


Fig. 8.

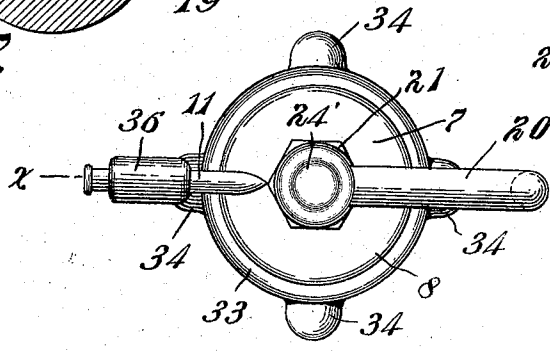


Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES S. RICHMAN, OF CHICAGO, ILLINOIS.

LIQUID-DISPENSING APPARATUS.

932,497.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed July 25, 1908. Serial No. 445,400.

To all whom it may concern:

Be it known that I, CHARLES S. RICHMAN, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Liquid-Dispensing Apparatus, of which the following is a specification.

My invention relates to liquid dispensing apparatus, and more especially to that class of the same especially adapted for use in connection with an automobile, or other suitable place, provided with compressed air supplying means, for the purpose of dispensing liquids from the original bottle or container.

The object of my invention is to provide an apparatus of the character mentioned, which may be easily and quickly secured to the mouth-portion of a bottle or container, and also one which may be just as quickly removed from the same when the bottle or container has been dispensed of its contents, so that said bottle or container may be replaced by a new one.

A further object of my invention is to provide an apparatus of the character mentioned, which shall be strong and durable, simple of construction, hence of low cost of manufacture.

Other objects will appear hereinafter.

With these objects in view, my invention consists generally in a liquid dispensing apparatus which as designed, may be secured to the mouth-portion of any standard sized bottle, and which in connection with a compressed-air supply is adapted, when the valve operating button or thumb-piece of a faucet embodied in my invention, is depressed, to force the liquid contained in said bottle out through a suitable faucet-spout.

My invention further consists in certain details of construction and arrangements of parts all as will be hereinafter fully described and particularly pointed out in the claim.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a side elevation of a bottle or container provided with the preferred form of my device, portions of the same being broken away so as to better illustrate my apparatus, Fig. 2 is a vertical, transverse section thereof, Fig. 3 is an enlarged front elevation of my apparatus, Fig. 4 is a top plan view thereof, Fig. 5 is a vertical longi-

tudinal section taken on substantially the line $x-x$ of Fig. 4, Fig. 6 is a detail of the attaching means embodied in my invention, Fig. 7 is an enlarged horizontal section taken on the line $y-y$ of Fig. 5, Fig. 8 is a horizontal section through the faucet-valve embodied in my invention, and Fig. 9 is a vertical section thereof taken on the line $z-z$ of Fig. 8.

Referring now to the drawings, 1 indicates an ordinary bottle or container, and 2 the mouth-portion thereof, said mouth-portion being provided with the usual enlargement or annular ridge 3. Having its downwardly extending tapering plug portion 4 adapted to fit snugly into the mouth or upper opening 5 of said mouth-portion 2, said plug being provided with a packing or gasket 6 of rubber, cork or other suitable material so as to facilitate a snug or airtight connection between the same and the bottle or container 1, is a stopper member 7. Said member is provided with an outwardly extending annular flange or shoulder portion 8, the same being preferably formed integrally therewith. The horizontally extending undersurface 9 of said flange portion 8 is adapted to rest upon the upper edge of the mouth-portion of the container, a gasket or packing-ring 10 of rubber, cork or any suitable material, being preferably inserted between said surface and edge so as to effect a more efficient airtight connection between said parts. Projecting from the upper surface of the flange portion 8 of the stopper member 7 and preferably formed integrally therewith, is a compressed-air inlet pipe 11, the passage 12 in said pipe leading to, that is connecting with, a downwardly extending passage 13 provided in the member 7, as clearly shown in Fig. 5 of the accompanying drawings. The plug portion 4 of the stopper member 7 is provided with a centrally positioned, vertically extending perforation 14, into which perforation is suitably secured as by brazing or soldering, the upper end portion of a liquid eduction pipe 15, the lower end 15' of said pipe extending substantially to the bottom of the bottle or container 1. Said stopper member 7 is also provided with a perforation 16, the same being in axial alinement with the perforation 14 but of a greater diameter than said perforation. Having its lower portion threaded in said perforation 16 in the member 7, and its upper portion 18 projecting

above the same is a faucet member 19, said member being provided with a suitable spout 20 preferably formed integrally therewith. The vertically disposed portions 17 and 18, and the spout 20 of the member 19 are hollow, that is said portions form a continuous liquid eduction passage as clearly shown in Fig. 5. Threaded in the upper end of the portion 18 of said faucet is a plug 21, the same being provided with a centrally positioned perforation 22. Provided at its lower extremity with a ball-valve 23 and mounted for vertical reciprocation in said perforation 22 in the plug 21, is a valve operating stem 24, the same being provided at its upper extremity with a thumb-piece or button 24'. Said ball-valve 23 is adapted to rest in a cup or valve-seat 25 provided in the interior of the faucet, the valve-stem 24 being made triangular in cross section at this point as clearly shown in Fig. 7, so as to allow the free passage between it and the valve-seat. Said valve is held in normal, that is, in closed position by a coil-spring 26, the lower end of said spring resting upon washers 27 provided at the bottom of the perforation 16.

So as to facilitate securely locking the stopper member to the mouth-portion of the bottle or container, that is, so as to effect the air-tight connection between said parts as before mentioned, I provide a two-part flanged ring 28, the same being provided at its lower end with an internal flange 29, said flange being adapted to abut the annular rib 3 provided on the mouth-portion 2 of the bottle or container as clearly shown in Fig. 5, and at its upper end with the external flange 30. Having its upper end portion 31 threaded upon the periphery of the flanged portion 8 of the stopper member 7, and its lower internally flanged portion 32 abutting the undersurface of the external flange 30 of the two-part ring 28 is a coupling-nut 33, said nut being preferably provided with the projections 34 formed upon its outer circumference, so as to facilitate readily rotating the same.

When attaching my liquid dispensing apparatus to a bottle or container, the coupling-nut 33 is first slipped over the mouth-portion of the same, and rested upon the upper surface of the body portion of said bottle or container. The plug portion 4 of the stopper member 7, in which is secured the faucet member 19, is then inserted into the mouth of the bottle or container. The two parts of the flanged ring 28 are then held in place upon the mouth-portion of the bottle or container, with the upper surfaces of their internal flanges resting against the undersurface of the ridge 3 provided on said mouth-portion. The coupling-nut is then drawn up over said two-part ring and screwed upon the threaded periphery of the flanged portion 8, said nut being rotated

until the stopper member is rigid in the mouth of said bottle or container, when an airtight connection will have been effected. The inlet pipe being then connected as by a rubber hose or tube with a compressed-air supply pipe, the apparatus is ready for use. It is obvious that air admitted through said pipe 11 will cause a constant pressure upon the surface of the liquid contained within the bottle or container, and that by depressing the button 24', the valve 23 of the faucet will be opened, in which case, the liquid will be forced upwardly through the eduction pipe 24 and thence between the coils of the spring 26, through the liquid eduction passage in the faucet and will be finally exhausted from the spout 20. So as to facilitate a freer flow of the liquid after leaving the upper end of the eduction pipe 15, I hollow out the ball-valve 23 as at 35 and provide said ball with a plurality of radial passages 35' leading therefrom as clearly shown in Figs. 8 and 9, through which and the openings between the coils of the spring 26, the liquid passes after leaving the eduction pipe 15.

So as to facilitate, after detaching the bottle or container from the source of compressed-air supply, dispensing the liquid from said bottle or container by means of compressed-air, I provide the outer extremity of the air-inlet pipe 11 with a tubular valve containing member 36, said member being threaded thereon. Said member 36 forms a cup or seat 37 for a ball-valve 38, a coil-spring 39 normally holding said valve in closed position as shown in Fig. 5. It is obvious that with this arrangement, air may be admitted through said valve, but cannot be exhausted therethrough. Hence by providing my dispensing apparatus with a valve as described, the bottle or container after having once been charged with compressed-air, may be operated, the liquid being dispensed with almost the same velocity as though it were connected with a constant compressed-air supply. This valve may or may not be used as desired, the same being adapted to be readily attached or detached and the compressed-air supply pipe connected or secured to the outer extremity of either just as readily.

Having described my invention what I claim as new and desire to secure by Letters Patent, is:

In a device of the class described, a stopper member adapted to be secured to the mouth of the container, a faucet at the upper end of said member, a liquid eduction tube depending from said member, there being a passageway leading from said tube to said faucet, an annular valve seat in said passageway, a spring pressed valve adapted to seat against said valve seat, a valve stem on said valve extending through the aperture in said valve seat, the portion of said valve stem adjacent

said valve seat being triangular in cross section and said valve being provided with fluid passageways extending from the bottom and through the sides thereof, and means for depressing said valve, substantially as described.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

CHARLES S. RICHMAN.

Witnesses:

JANET E. HOGAN,
HELEN F. LILLIS.