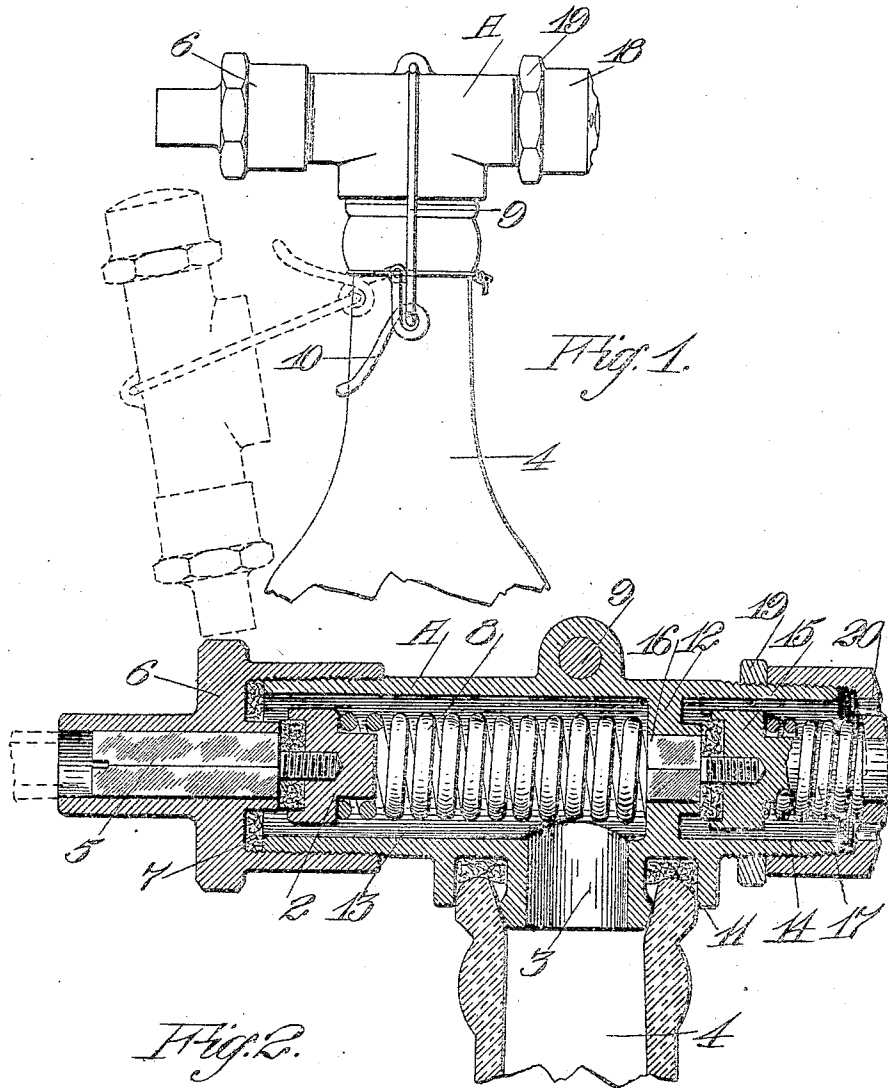


D. LANDAU.
BOTTLE STOPPER.
APPLICATION FILED OCT. 30, 1908.

941,788.

Patented Nov. 30, 1909.



WITNESSES

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DEWIS LANDAU, OF SAN FRANCISCO, CALIFORNIA.

BOTTLE-STOPPER.

941,788.

Specification of Letters Patent.

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Application filed October 30, 1908. Serial No. 460,184.

To all whom it may concern:

Be it known that I, DEWIS LANDAU, citizen of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

My invention relates to a bottle stopper, and pertains especially to a stopper for bottles containing aerated or carbonated liquids.

Bottles containing ginger-ale, soda, and like effervescent beverages, are usually filled and charged at the factory, and capped or sealed with a special capping or sealing machine. Accidents frequently occur by the bursting of bottles due to their being overcharged with gas, or charged under too high pressure.

The object of my invention is to provide a simple, practical stopper of novel construction which will permit a bottle to be filled and charged from any suitable source of supply and under any pressure, and which stopper will have suitable automatic venting means which will prevent the bottle being charged beyond a predetermined maximum pressure. This device will not only prevent bottles bursting from internal pressure, but it will enable the bottle readily to be refilled and charged without sending to the factory.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation, showing the application of my device. Fig. 2 is a longitudinal section through Fig. 1.

The invention comprises essentially a valve casing A, here shown as having an inlet in one end controlled by a suitable spring-actuated valve 2, and an outlet at 3 by which the charging liquid or gas is admitted to the bottle 4. The valve 2 has a polygonal stem 5 operating in a suitable cylindrical guideway formed in the coupling 6 which is screwed on to or otherwise suitably secured to the casing A; the packing 7 being employed to form a tight joint between the abutting parts. The valve 2 is normally maintained seated by means of the spring 8.

The casing A which in fact forms the body of the stopper is pivotally and permanently connected with the bottle, and is adapted to form a closure therefor in a

manner similar to the ordinary porcelain stoppers which are carried by some suitable locking-bail arrangement. As here shown, the top of the body or casing A opposite port 3 has a perforated boss to receive a locking bail 9, which latter is operated by a locking lever 10 in a manner well known in the art. The stopper seats tight down on top of the bottle when the lever is thrown down into locking position, as shown in full lines, Fig. 1. When the lever is thrown upward and the device turned to one side, as shown in dotted lines, Fig. 1, it permits the contents of the bottle to be poured out. A suitable seat for the mouth of the bottle is provided around the port 3, and this seat contains a packing 11 of suitable material, such as cork or rubber, to cause a tight joint between the stopper and the bottle when the bottle is sealed.

In order to fill the bottle with liquid which has already been charged, or in order to charge the bottle, which latter may have been filled with liquid ready for charging, the device is closed over the mouth of the bottle and locked thereon, as shown in full lines, Fig. 1. The coupling member 6 is then coupled by any suitable means with a suitable source of charged liquid or gas under pressure. The gas or charged liquid is then allowed to act on the valve 2 and against the tension of spring 8 to open the valve; the gas or charged liquid passing around the polygonal stem 5 into the body of the stopper and through the port 3 into the bottle.

In order to obviate any danger of the bottle bursting by being overcharged, preferably an automatic relief valve is employed in conjunction with the device. In order to accommodate this safety valve arrangement, the valve casing A has a partition or diaphragm 12 which divides the casing into two valve chambers 13—14; the inlet valve 2 operating in chamber 13, and the relief or safety valve 15 operating in the chamber 14. Communication between the two chambers is had through a suitable port in the diaphragm 12, which port is normally closed by valve 15, the latter having a polygonal stem 16 operating and guided in the port. The stem of the valve 15 is surrounded by a regulating tension spring 17 which bears against the regulating gland 18 having a polygonal set nut 19. The gland may be turned so as to screw on or off of the thread-

ed end of the body A, and thereby increase or decrease the pressure of the spring 17 against the valve 15. Suitable outlet ports are provided for chamber 14, as represented at 20.

The tension of the spring 17 is regulated according to the predetermined maximum pressure to which the bottle is to be charged. For instance, if a bottle is capable of safely withstanding fifty pounds pressure, the valve 15 is regulated by turning the gland 18 so that the valve will open, say, when a pressure of forty pounds is reached in the bottle. By the use of a safety valve arrangement of this sort, it is possible for a bottle provided with my attachment to be coupled with any source of fluid supply under pressure, no matter how great that pressure may be, without any danger of bursting the bottle, or injury to the operator; because the moment that a safe pressure in the bottle is exceeded, valve 15 will automatically open and allow the excess to blow off through the ports 20. Likewise, in case gas is generated in the bottle after the latter has been filled, either by heat or by shaking or other means, the excess gases generated will be vented by the automatic opening of valve 15.

By means of this invention bottles can readily be refilled and recharged without being sent back to the factory. Where it is customary to vend soft effervescent drinks from time to time from the same bottle, the bottle can easily be recharged after each drink is drawn from it, so that the last drink in the bottle will be of the same strength and have the same sparkle and effervescent quality that the first one had.

It is manifest or possible that the construction herein specified may be varied without departing from the principle of the invention, and I desire it to be understood that the invention is not limited to any specific form or arrangement of parts, except in so far as such limitations or their mechanical equivalents are specified in the claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. The combination with a bottle, of a

stopper member hingedly connected therewith, said stopper member having communicating ports therein, one of said ports forming an inlet and the other of said ports forming an outlet, said stopper having a seating portion around the outlet to receive the mouth of the bottle, a spring-actuated valve in the inlet, and said stopper having an automatic relief valve.

2. The combination with a bottle, of a stopper member therefor, means for securing the stopper member in operative position on the bottle, said stopper member having a passageway communicating with the interior of the bottle, a normally closed valve in said passageway, which valve is operated by fluid pressure external to the bottle, said stopper member having another passageway communicating with the interior of the bottle, and a normally closed valve in said second mentioned passageway which is operated by fluid pressure interiorly of the bottle.

3. The combination with a bottle, of a stopper member therefor, said stopper member comprising a valve casing divided into two valve chambers, and a spring-actuated valve in each chamber, said valve chambers communicating with the interior of the bottle, one of said valves operated by fluid pressure external to the bottle and the other of said valves operated by fluid pressure within the bottle.

4. The combination with a bottle, of a stopper member therefor, said stopper member comprising a valve casing divided into two valve chambers, a spring-actuated valve in each chamber, said valve chambers communicating with the interior of the bottle, one of said valves operated by fluid pressure external to the bottle and the other of said valves operated by fluid pressure within the bottle, and means for regulating the tension of said last-named valve.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

DEWIS LANDAU.

Witnesses:

CHARLES EDELMAN,
C. C. COOK.