

H. KRONE.

DROP BOTTLE.

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1,041,105.

Patented Oct. 15, 1912.

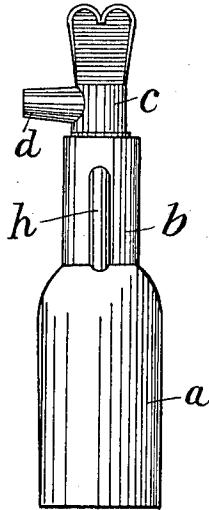


Fig. 1.

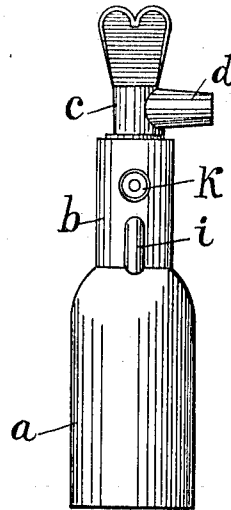


Fig. 2.

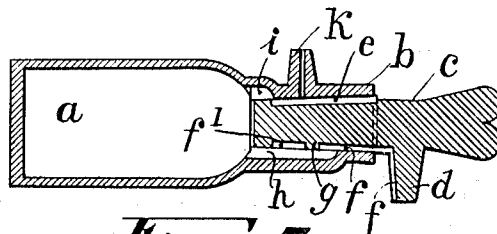


Fig. 3.

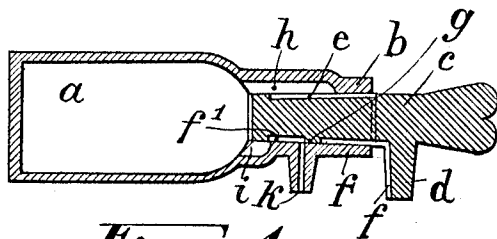


Fig. 4.

Witnesses
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HEINRICH KRONE, OF MÜNSTER, GERMANY.

DROP-BOTTLE.

1,041,105.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed April 10, 1912. Serial No. 689,926.

To all whom it may concern:

Be it known that I, HEINRICH KRONE, a subject of the Emperor of Germany, residing at Münster-on-the-Deister, in Germany, have invented a certain new and useful Improvement in Drop-Bottles, of which the following is a specification.

The present invention relates to drop bottles used for delivering medicinal or other liquids in separate drops, and its object is to provide a bottle having improved means for adjusting the delivery passage to suit liquids of different densities or degrees of mobility, so that thick and thin liquids can be delivered with equal accuracy in the form of uniform drops of the proper size.

The invention is illustrated in the accompanying drawings which show one form by way of example, Figure 1 being a side elevation of the bottle with stopper therein, and Fig. 2 is a view of the opposite side of the bottle, Fig. 3 a longitudinal section of the bottle and stopper, showing the bottle in horizontal position with the stopper adjusted for delivering drops of the thicker kinds of liquid, and Fig. 4 is a longitudinal section showing the stopper adjusted for delivering thinner liquids.

The bottle *a* shown in the drawing is of a usual shape adopted for this type of appliance and has a neck *b* into which fits a ground glass stopper *c* having a lateral projection *d*. The conical portion of the stopper has at diametrically opposite parts of its circumference longitudinal grooves *e*, *f* and *f*¹, the groove *e* being at one side and the grooves *f* *f*¹ at the other. The grooves *f* and *f*¹ are separated by a ridge *g*. The grooves *e* and *f*¹ extend to within a short distance of the bottom of the stopper, the bottom of the stopper being of circular cross section. The groove *f* extends from the ridge *g* to the upper end of the conical part and along the underside of the projection *d*. The neck *b* of the bottle has at one side an enlargement with a longitudinal groove *h* therein; this groove *h* extends upward, from the base of the neck, to a short distance above the ridge *g*. Dia-

metrically opposite the groove *h* the neck *b* is provided with a short groove *i* at the base, and with a short outlet nozzle *k* above this groove *i*. The groove *i* and the nozzle *k* are so arranged that when the stopper is in the position shown in Fig. 4, with the grooves *f* *f*¹ at the side where the nozzle *k* is located, the groove *f*¹ establishes communication between the groove *i* and the nozzle *k*, the passage between these grooves being constricted so that this adjustment is suitable for delivering thin liquids.

For delivering thicker liquids the stopper is turned through 180° into the position shown in Fig. 3, with the groove *e* at the side where the nozzle *k* is located, and the projection *d* is held downward. In this position liquid can flow through the groove *h* in the neck *b* and the groove *f* in the stopper *c*, so as to be delivered at the end of the projection *d*, air being admitted to the bottle through the nozzle *k*, groove *e* and groove *i*.

All the outlet passages can be closed by turning the stopper through approximately 90° from the position shown in Fig. 3 or Fig. 4.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

In a drop bottle the combination, with a bottle neck having a short vertical internal groove at the neck base, a longer vertical internal groove extending upward from the neck base and a lateral delivery orifice vertically above said short groove, of a stopper having a lateral projection above its insertible part, two vertical aligned grooves separated by a ridge of the stopper material above the level of the lateral neck orifice, the upper aligned groove extending in part along the underside of said projection, and a third vertical groove at a part of the stopper circumference remote from said aligned grooves, said third groove and the lower aligned groove terminating at a level slightly below the upper end of the shorter neck groove, the whole arranged so that by adjusting the aligned stopper grooves against the longer neck groove a passage is made

from the interior of the bottle to the grooved lateral stopper projection, the third stopper groove being then against the lateral neck orifice, and that by adjusting the lower alined groove against the shorter neck groove a passage is made from the interior of the bottle to the lateral neck orifice.

In witness whereof I have signed this specification in the presence of two witnesses.

HEINRICH KRONE.

Witnesses:

CARL SCHWIEGER,
LUISE MAAS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."