

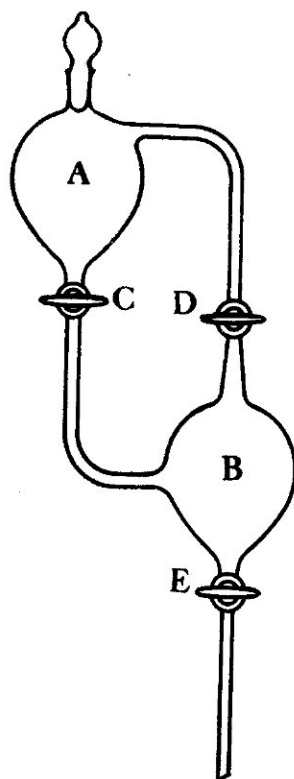
A SEPARATORY FUNNEL FOR WASHING HEAVY, VOLATILE LIQUIDS.—
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ABSTRACT.

Two separatory funnels are sealed together in such a way that a heavy liquid in the first can be separated from a supernatant liquid and delivered to the second funnel without contact with the outside atmosphere. After removal of the supernatant liquid, the heavy liquid can be returned to the first funnel for rewashing.

The technic employed in washing a liquid depends on the relative densities of the two fluids. When the wash liquor is



the heavier, as in the case of washing ether with water, the procedure is simple. The mixture is shaken in a separatory funnel, allowed to separate and the heavier aqueous layer drawn off through the stopcock. A fresh portion of water is added and the process repeated, the liquid washed remaining in the separatory funnel throughout the process.

The case is different when the liquid to be washed is heavier than the wash liquor. Here the heavy liquid is removed from the separatory funnel at the end of each washing. If the heavy liquid is volatile, there will be loss by evaporation, especially when several extractions are necessary.

To avoid this loss the piece of apparatus illustrated in the accompanying figure was designed.

It is made by joining together two ordinary separatory funnels. The two liquids are shaken together in bulb A. The apparatus being held upright, stopcock D is opened, then the heavier layer is delivered to bulb B by opening stopcock C. After closing the stopcocks, the lighter wash liquor is poured out of A and a fresh portion added. The liquid in B is returned to A by inverting the apparatus and opening the stopcocks C and D. All is then ready for a repetition of the process.

The apparatus has been very useful, especially in the washing of alkyl iodides, its use enabling us to improve the yields of these volatile substances. In spite of its seeming fragility, it is not easily broken, no accidents having occurred during frequent use. If desired, however, it may be wired to a board in which two holes have been cut for the insertion of the bulbs.

In cases where an inert atmosphere is desirable, the stopper to bulb A is replaced by a two-holed stopper bearing tubes through one of which the gas can be admitted and through the other the liquid introduced or removed.