

# NEW APPARATUS

## APPARATUS FOR TESTING THE RESISTANCE TO WET HEAT OF BACTERIAL SPORES IN PAPER CARRIERS

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THE purpose of this report is to give details of an apparatus mentioned in a previous communication from this Department (Cook and Brown, 1960).

### Construction

The apparatus consists essentially of an autoclave which has been modified so that spore impregnated paper discs may be introduced into the heated autoclave without causing loss of pressure.

Six holes were drilled into the lid and into each was fitted a cylindrical brass plunger  $7\frac{1}{2}$  in. long and  $6/10$  in. in diameter, together with sleeve,

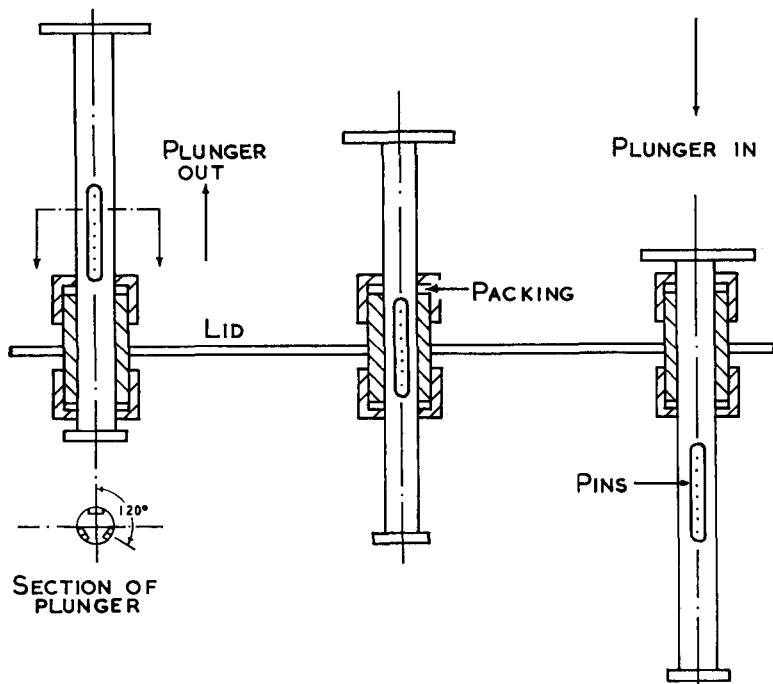


FIG. 1. Modified lid of autoclave with plungers.

locking and gland nuts. Three equidistant channels were cut longitudinally into the barrels and down the centre of each channel was embedded a row of seven stainless steel pins. These pins were designed to support

the paper discs so that they do not project beyond the surface of the barrel. The length of the channel is less than that of the sleeve; this prevents escape of steam up the channel on entry into the autoclave. Graphited packing material, provided with the gland nut, prevents pressure loss while the barrel is inside the apparatus (see Fig. 1).

A "T" piece screwed into the top of the barrel acts as a handle to facilitate rapid entry and withdrawal. A circular brass disc, of greater diameter than that of the barrel, was screwed on to the bottom of each plunger to prevent the plunger being completely withdrawn from the autoclave. A thermocouple was included by drilling a groove longitudinally down the surface of one of the plungers to carry the wires which terminate in a bimetallic strip which replaces one of the pins. The groove was then packed with a thermostable filler. As well as this thermocouple, the apparatus is fitted with a thermometer and a pressure gauge.

#### *Use of Apparatus*

The apparatus is intended for use with "Antibiotic Assay paper discs"\*<sup>†</sup>, but other kinds of carriers may be used. The spore impregnated paper carriers, previously perforated, are fitted separately to the pins with forceps. When the plunger is loaded the discs are brought into instantaneous contact with steam at constant temperature by pushing the barrel down into the heated autoclave. After a time interval measured by a stop watch the plunger is withdrawn from the steam. Immediately afterwards the paper carriers are aseptically transferred to the recovery medium and incubated.

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#### REFERENCE

Cook, A. M. and Brown, M. R. W. (1960). *J. Pharm. Pharmacol., Suppl.*, **12**, 116T-118T.

\* Whatman Antibiotic Assay Discs, W. and R. Balston, Ltd., obtained from H. Reeve Angel & Co. Ltd., 9, Bridewell Place, London, E.C.4.