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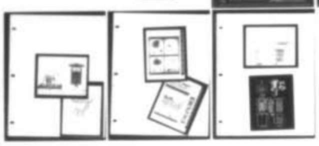

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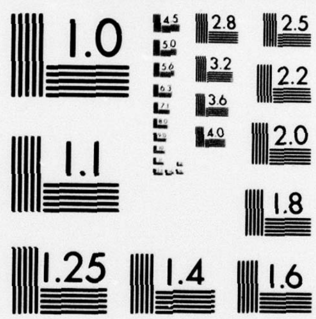

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A decalcification cabinet substantially contributes to saving production time and expense in the decalcification and preparation of osseous and dental tissues for microscopic slides.

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THE DECALCIFICATION CABINET*.

A New Device for the Histopathology Laboratory.

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A "better mousetrap" for the decalcification of osseous and dental tissues has been developed in the Histopathology Laboratory at the U. S. Army Institute of Dental Research. Previously, all hard biological specimens requiring decalcification for microscopic slide preparation were individually wrapped in gauze, tied with a cord and suspended in a beaker containing decalcifying solution for the appropriate length of time (Figure 1). Although effective, this procedure necessitated the use of unproductive time to wrap, tie, cut, and unwrap each specimen. This was especially true when a large number of samples were being processed. With the decalcification cabinet described herein, specimens can be easily placed in a drawer without wrapping (Figures 2 and 3) and effectively decalcified.

The entire cabinet is made from a single block of high density polyethylene plastic which inserts into a one-liter beaker. However, it can be constructed by cutting individual sections and cementing them together with an adhesive. The round cabinet top acts both as a beaker cover and keeps the cabinet suspended in the decalcifying solution. The cabinet bottom does not contact the beaker bottom, thus allowing the oval stirring magnet to rotate uninhibited. The even distribution of the decalcifying solution is thus insured as it flows through the numerous 3/16" diameter holes.

As demonstrated in Figure 4, the cross-shaped drawer partitions can be readily separated and removed to accomodate larger gross specimens.

Following decalcification a section of rubber tubing connected to the sink faucet nozzle is placed in the large 7/8" diameter hole in the cabinet top. This permits water to pass from the faucet to thoroughly wash the specimens (Figure 5), which are then removed for further processing.

Polyethylene plastic will resist continuous exposure to inorganic and organic acids for up to thirty days or longer without any damage to the material. Other suitable plastics such as polycarbonate and plexiglass can be employed to fabricate this device. Constant exposure of these plastics to chemical reagents has been reported to cause little or no damage after thirty days.[1] In addition, they are less expensive and easier to cut than the polyethylene. The high density polyethylene is commercially available and an experienced machinist-technician should have little difficulty constructing the cabinet (Figure 6). Our laboratory personnel have routinely used the cabinet for several months and state that it is very convenient, time-saving, and virtually eliminates the untidiness associated with the previous technique.

The authors wish to appreciatively acknowledge the technical assistance of Mr. Emil Hrast, Metal and Plastics Instrumentation Division, Walter Reed Army Institute of Research.

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Commercial materials and equipment are identified in this report to specify the investigative procedures. Such identification does not imply recommendation or endorsement or that the materials and equipment are necessarily the best available for the purpose. Furthermore, the opinions expressed herein are those of the authors and are not to be construed as those of the U. S. Army Medical Department.

LEGENDS

Figure 1	The decalcification cabinet (a) in position next to the previously used technique (b). Note the numerously dispersed openings and the magnetic stirrer (arrow).
Figure 2&3	Specimens to be decalcified are labeled and placed in individual drawer compartments.
Figure 4	A cabinet drawer demonstrating separated partitions for accomodating varying-sized gross specimens.
Figure 5	Rubber tubing connected to the water nozzle permits thorough washing of decalcified material.
Figure 6	Detailed plans for fabrication of the decalcification cabinet.

REFERENCES

1. Scientific Products 76; Catalog of equipment and supplies for clinical, industrial, educational and research laboratories, Appendix p. 820, 1976.

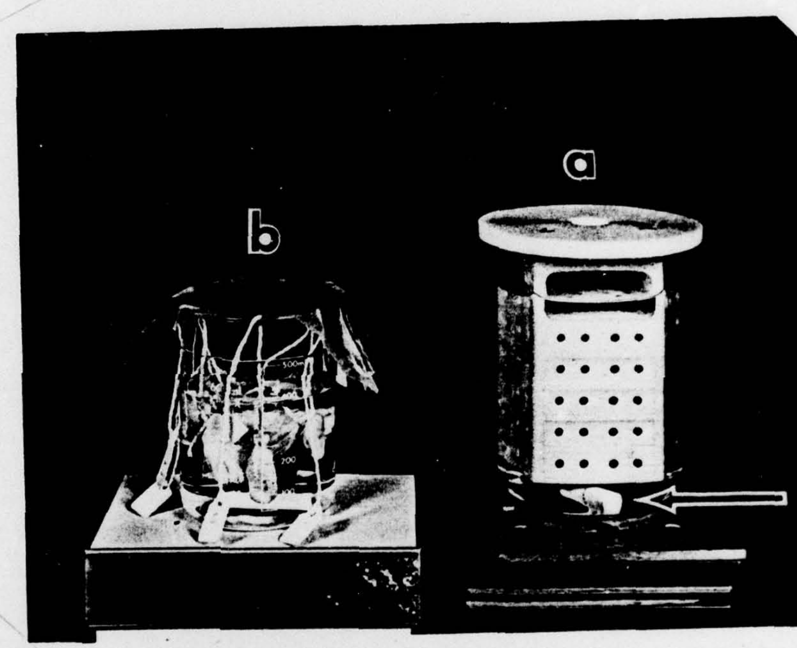
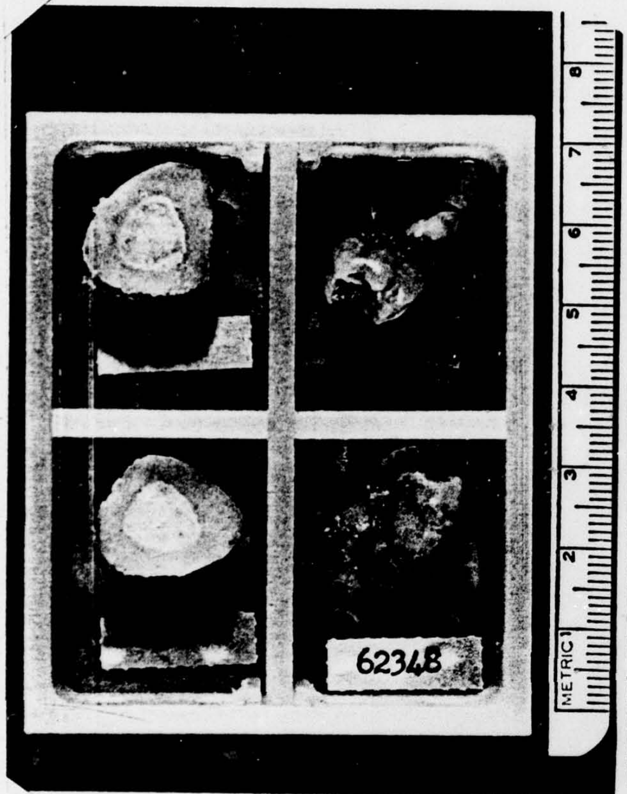


FIGURE 1 The decalcification cabinet (a) in position next to the previously used gauze-wrap technique (b). Note the numerously dispersed openings and the magnetic stirrer (arrow).



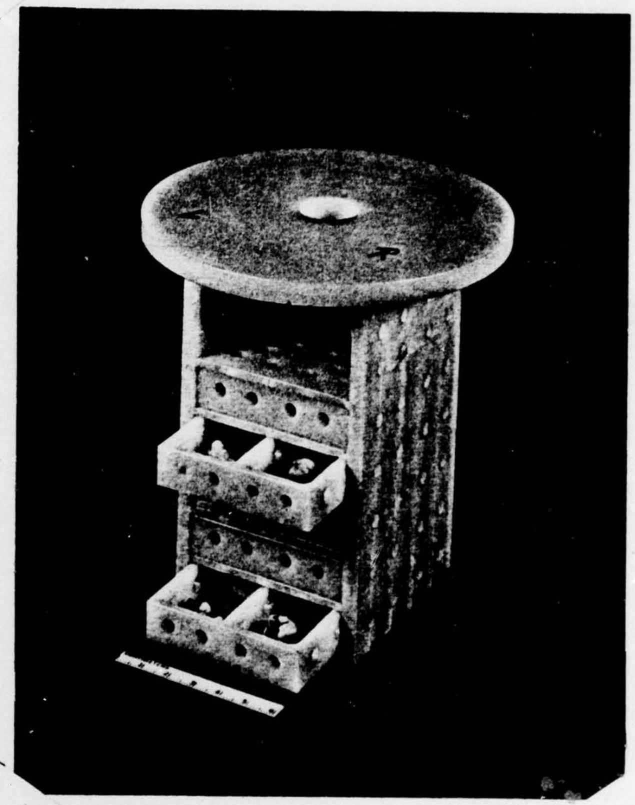


FIGURE 2 & 3 Specimens to be decalcified are labeled and placed in individual drawer compartments.

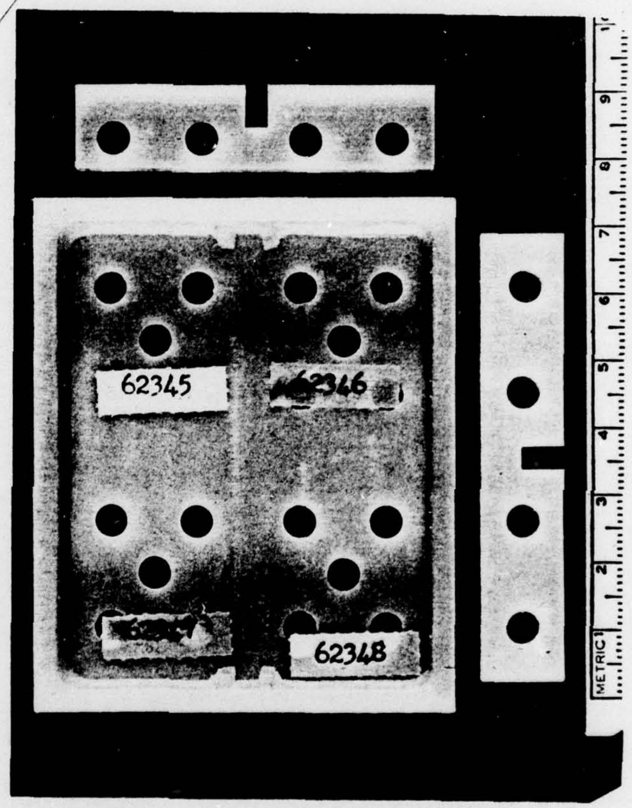


FIGURE 4 A cabinet drawer demonstrating separated partitions for accomadating vary-sized gross specimens.

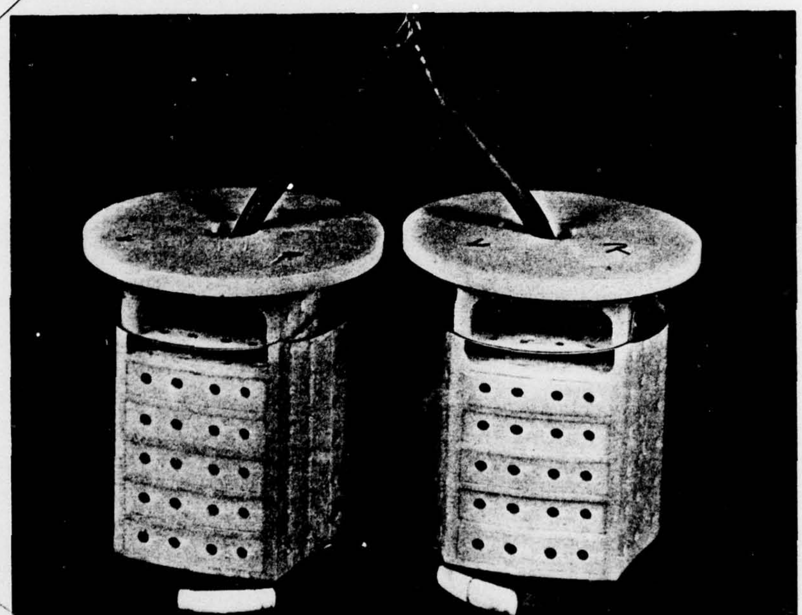


FIGURE 5 Rubber tubing connected to the water nozzle permits thorough washing of the decalcified material.

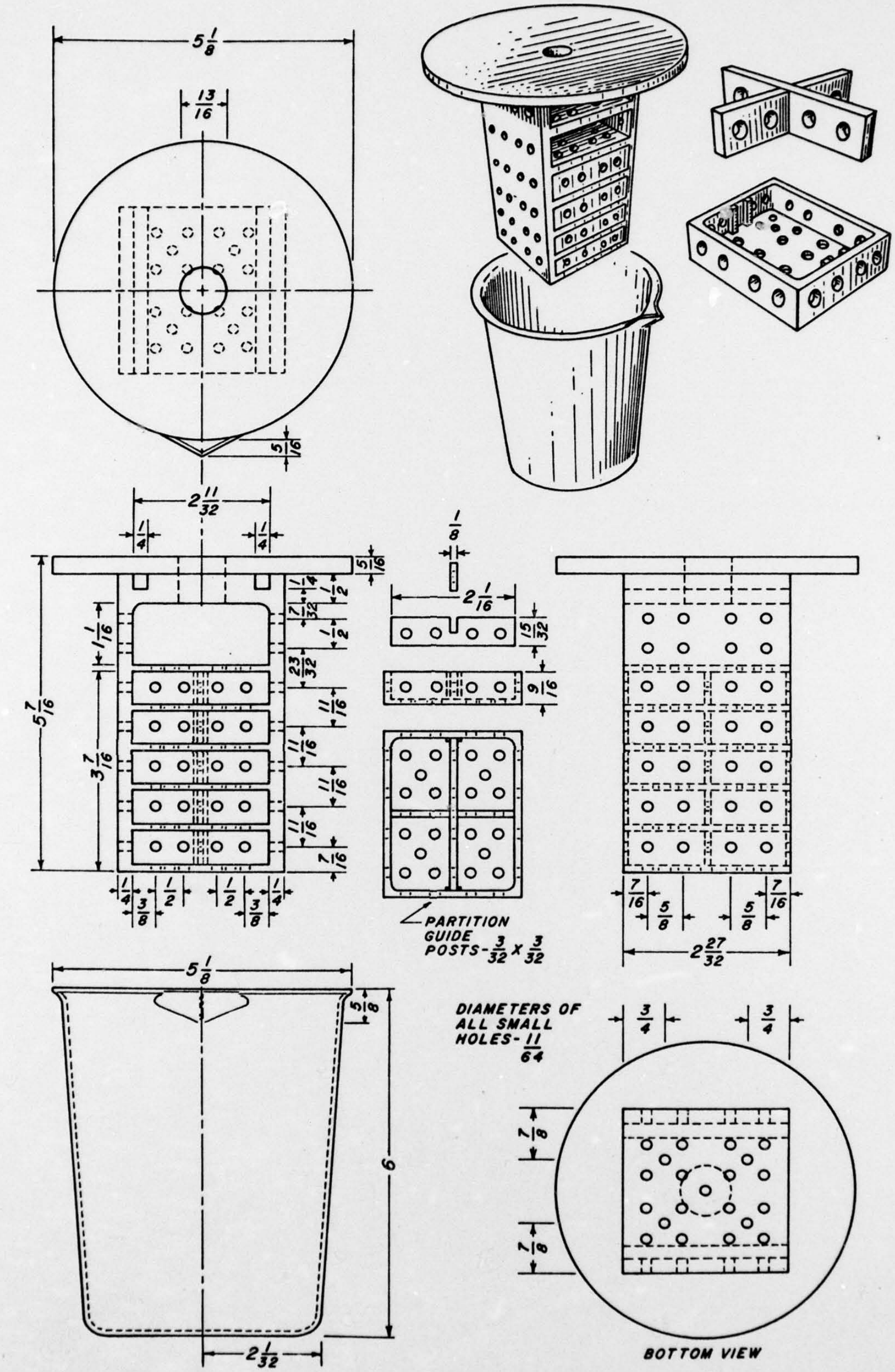
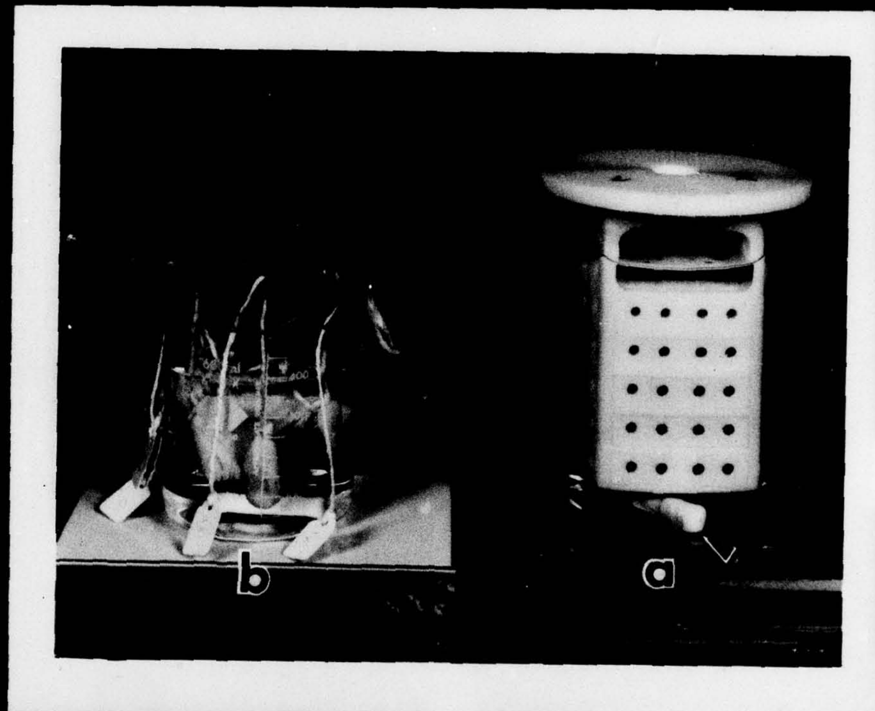


FIGURE 6 Detailed plans for fabrication of the decalcification cabinet.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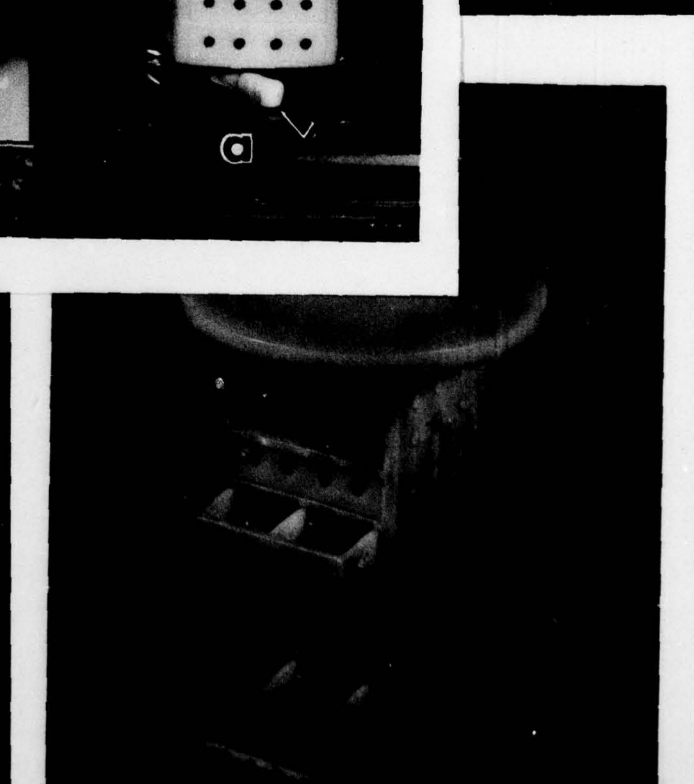

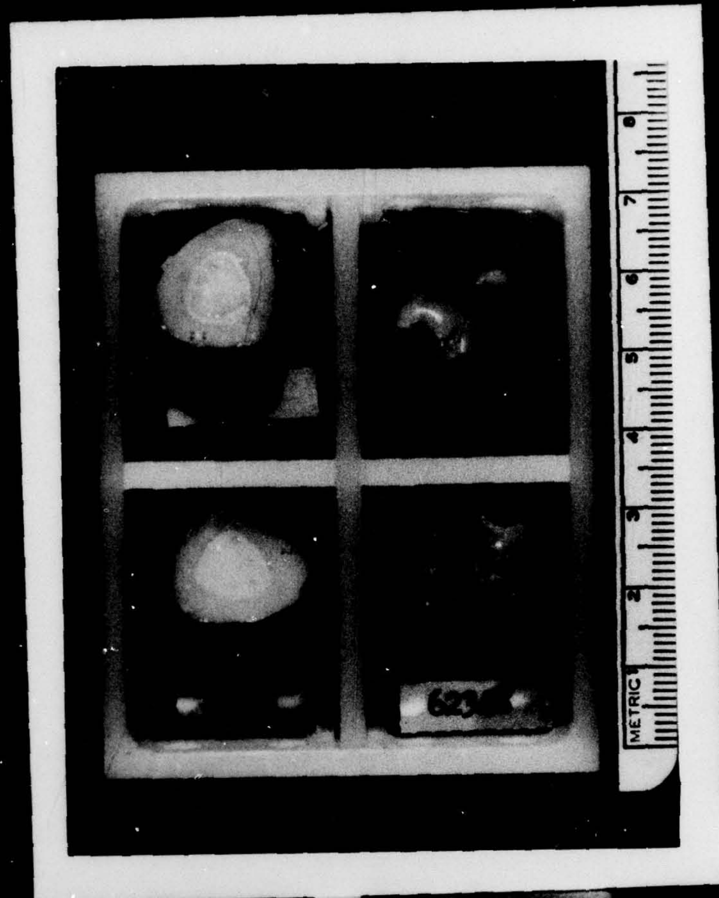
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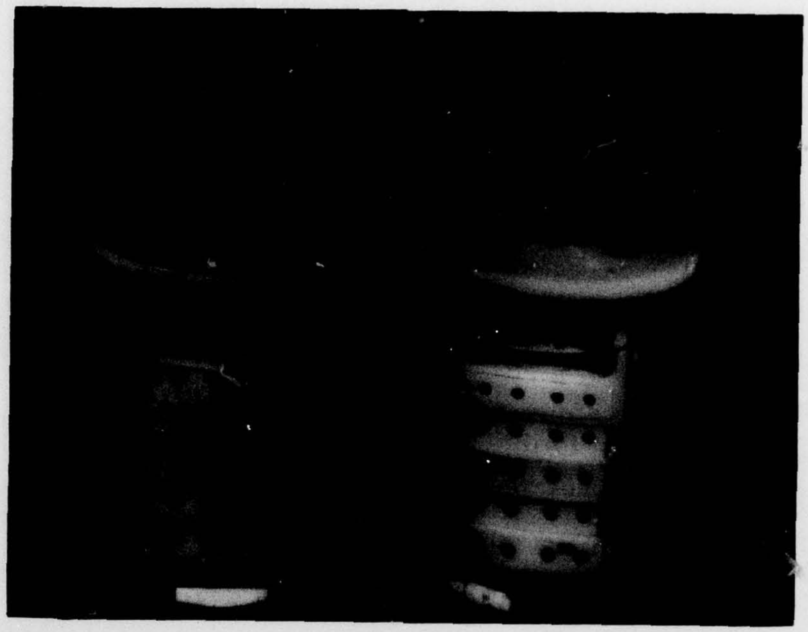

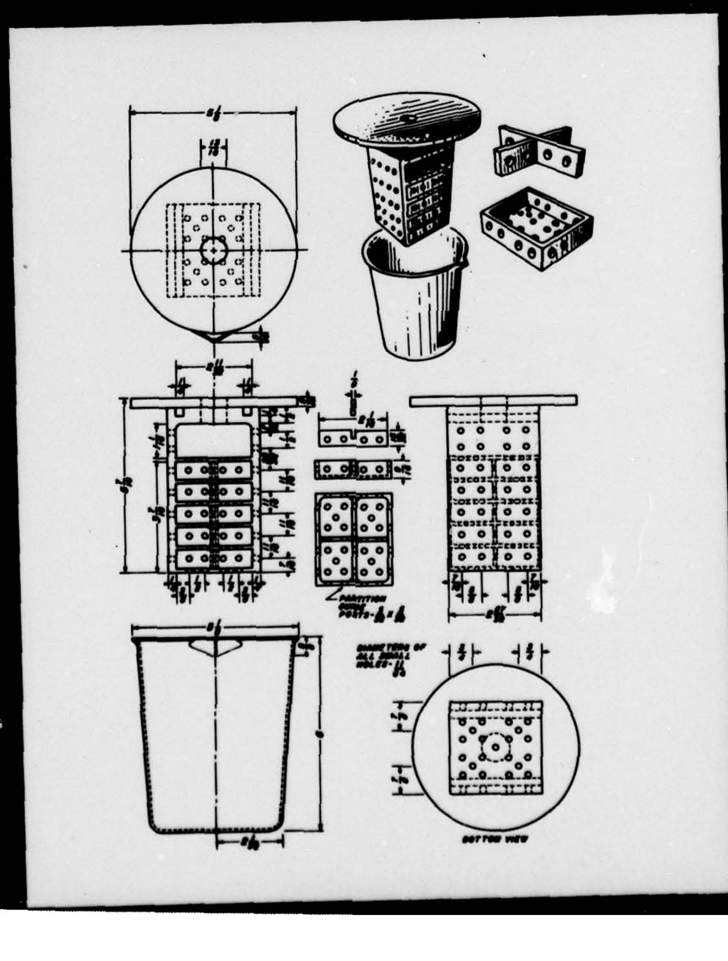
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