

Inexpensive Rat Metabolism Cage

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An inexpensive rat metabolism cage is described and illustrated.

MANY forms of metabolism cages are available for metabolic studies utilizing small animals. They are constructed from glass (1), metal screens attached to glass funnels (2-5), or various other combinations of materials (6, 7). Most of these designs separate urine from feces, but they have two disadvantages: expensive construction and a long flow path which allows the urine to evaporate while passing to the collecting vessel. The ap-



Fig. 2.—Assembled metabolism cage containing a rat.

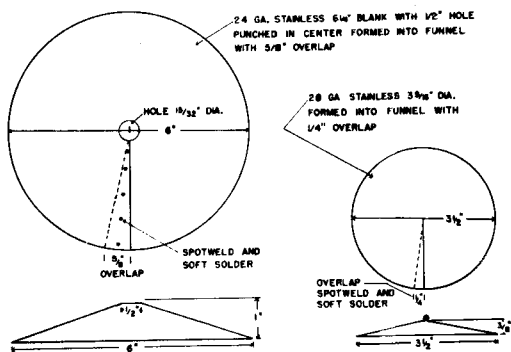
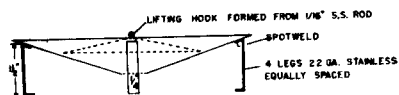
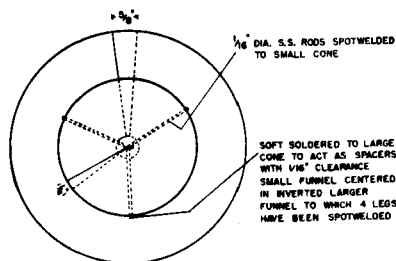


Fig. 1.—Specification for construction of double stainless steel funnel.

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paratus described in this report overcomes these difficulties.

Figure 1 gives the dimensions of the double funnel which is constructed from stainless steel and arranged to clear the walls of a standard Pyrex 4-L. beaker which constitutes the cage proper. The inner screen, which supports the animal, is formed from 8-in. circles of 4×4 mesh galvanized hardware cloth compressed in a jig made of $1\frac{1}{8} \times 8.5 \times 8.5$ in. plywood having a $6\frac{1}{16}$ in. diameter hole and a pine disk $5\frac{7}{8}$ in. diameter and $1\frac{5}{8}$ in. thick. This screen is sprayed with three coats of clear Krylon to prevent interaction between the urine and the zinc of the galvanized hardware cloth. The cage cover is also constructed of hardware cloth squares with the corners turned down to fit the beaker. Figure 2 shows the assembled cage containing a rat. The urine collector is a glass dish with outside diameter of 56 mm. and an outside height of 20 mm.

REFERENCES

- (1) Rapp, K. E., Skinner, J. T., and McHargue, J. S., *J. Lab. Clin. Med.*, **31**, 598(1946).
- (2) Kinard, F. W., Danielson, R. N., and Warren, J. A., *Science*, **1947**, 105.
- (3) Harned, B. K., Cunningham, R. W., and Gill, E. R., *ibid.*, **109**, 489(1949).
- (4) Lazarow, A., *Methods Med. Res.*, **6**, 216(1954).
- (5) Draper, H. H., and Robbins, A. F., *Proc. Soc. Exptl. Biol. Med.*, **91**, 174(1956).
- (6) Campbell, D., *Acta Pharmacol. Toxicol.*, **14**, 13 (1957).
- (7) Brittain, R. T., and Spencer, P. S. J., *J. Pharm. Pharmacol.*, **15**, 483(1963).