

AN ELECTRICALLY OPERATED AUTOMATIC FEEDER FOR SHEEP

T.H. Jansen, P.W. Vorster and W.D. Basson

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Animal and Dairy Science Research Institute, Irene

In nutrition experiments it is often necessary to feed animals at specified times during the course of a day. Available labour is limited and manual feeding of animals outside normal working hours is difficult to arrange. Simple and apparently efficient automatic feeders for experimental sheep have been described by Beeston (1964) and de Wet (1972). Due to the size of these feeders, problems could arise where space is limited. An automatic feeder has therefore been designed and built which is very simple in design, compact and also convenient to install on top of most existing feed containers.

The unit consists of a metal container (1,0 mm galvanized iron sheet) divided into 4 equal compartments (see Fig. 1a). Each compartment has a trap door and is fastened to the container by means of a length of piano hinge and pop rivets. The unit is mounted on top of the feed container of a metabolism cage by means of 2 self-tapping screws and can easily be removed.

Each of the 4 trap doors is held in the closed position by means of a moveable round metal closure pin which slides in a bush mounted to the outside of the feed unit.

Each of these metal pins is activated by means of an electrical solenoid switch (AEG Dishwasher detergent dispenser solenoid for model 'Favorit R', 220V 50 Hz). The iron core of the solenoid is connected to the closure pin of the trap door by means of a small chain which allows approximately 2-3 mm free travel before the full load of the trap door pin is taken up. (See Fig. 1b).

The solenoids are connected to a time switch which has 4 outlets and does one revolution in 24 hr. (Type Ps 5; Process Control Instruments). This time switch is capable of a wide range of time programmed current impulses on each of its discs. This specific switch is programmed to give one impulse every 6 hours.

With this apparatus, all the feed dispensers must be loaded once every 24 hr to serve the 4 portions of feed from each of the respective bins. Each of the bins has a capacity of 7,8 l and will hold 5 kg finely ground maize. Although the automatic feeder described here will dispense 4 portions of feed at 6 hr intervals, the number of feeds could be increased by the addition of extra dispensers – either adjacent to or on top of those shown in Fig. 1.

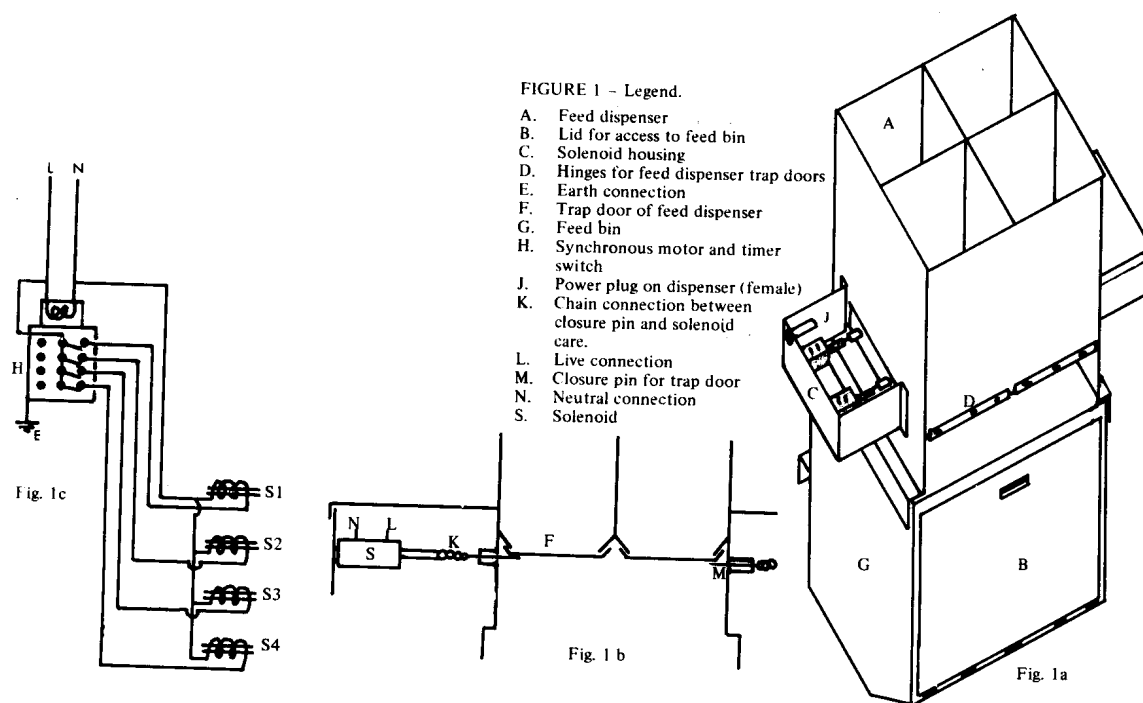


Fig. 1 - Automatic feed dispenser mounted on top of feed bin and schematic wiring diagram.

References

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