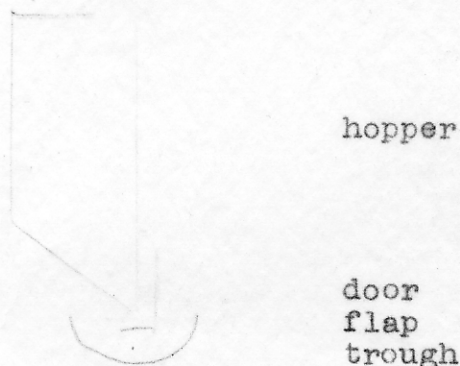


mechanism consists of a hinged door running the length of the hopper and fitted with a right-angle retaining flap. The door when opened releases a sheet of pellets into the trough. The amount delivered each time is controlled by an adjustable screw arrangement which changes the width of the opening at the base of the hopper. To overcome jamming and leaking the door is so arranged that it will effectively close off the flow of pellets even when the clearance between all parts of the door and hopper is greater than the size of the pellets.

The door is operated by a 110 volt solenoid which is controlled by a specially built electrical timer. This timer closes the circuit to the solenoid for a fraction of a second every 30 minutes. The hopper is giving very satisfactory performance in delivering chick size and hen size broiler pellets both singly and in combination. A side-view diagram of the hopper is shown below:



For this experiment the hoppers were regulated to deliver a quantity of pellets such that at the end of the 30 minutes the chickens would have them almost entirely cleaned up. The next impulse of the timer would then deliver a fresh feeding. The amount of pellets was small enough in each case so that it was an insufficient ration for the entire group. It was thought that this might maximize their competition for the feed and increase their tendencies to eat, thus resulting in the consumption of more feed.

Group C, in addition to being fed pellets from the automatic hopper, was given unlimited access to mash in the meal or powder form. Chick size pellets were fed to all groups during the first week of the experiment. Hen size pellets were begun on August 20, and after August 26 all hen size pellets were fed.

The birds were weighed at the end of each week, and the feed consumption for the week was recorded at the same time. During the course of the experiment it was occasionally necessary to remove a bird because of cannibalistic tendencies in the flock. Generally 12 to 24 hours isolation were sufficient to heal up the wounds and allow the bird to return to the flock, but in a few instances birds were taken out for the duration of the experiment. Mean weights and gains in the following tables exclude all the birds which were eventually rejected for more than 24 hours.<sup>1</sup> However, the feed consumption figures include all the birds which were present during the week in question.

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<sup>1</sup> Mean weights and gains including the rejects are only very slightly different from those excluding them, never exceeding 0.2 ounces.